Table 1. – Interim Summary of Required Methods Comparison Made for the Louisiana Commission under Docket U-22252

Testing Proposal	When ILEC & CLEC processes are different and not expected to yield same results	When ILEC actually is employing discriminatory practices.	When assumptions necessary for the statistical test to be valid are not meet
LCUG	Calculating these measures at the level of descriptive reporting required can lead to comparisons that are not "like-to-like." The answer here is not more detail (which pushes against sample size limits) but an analytic summary based on standardized data. That is the approach we have taken. In particular by building upon the CLEC volumes to standardize the BST comparisons, much of this concern can be reduced or avoided.	This test has possible merit and in some settings might even be preferred to that suggested by the FCC, albeit the FCC and LCUG numerical results we saw are virtually identical in most cases and have about the same problems -- notably that the strong assumptions required for validity do not always hold.	For monthly Louisiana results clear evidence exists that the assumptions in the LCUG test fail to hold and, hence this test is invalid for general use. Moreover it cannot be employed at all to statistically study differences in OSS response intervals between BST and the CLECs.
FCC		This measure could work well, if "likes-to-likes" are compared. Required, though, is that strong assumptions hold for it to be valid -- something we did not find always to be the case.	This test has the same basic weaknesses as the LCUG approach and is, hence, also unsuitable for general use. Moreover, it makes an additional assumption which does not appear to hold in all settings.
BST		The methods we have recommended will have essentially the same efficiency (or power) as the FCC and LCUG tests to detect differences, should they exist. They are, moreover, completely practical and do not prefer one side over the other.	For individual Louisiana results, possible assumption failures are judged unlikely and no evidence for them was found. For the month-to-month changes more study is needed and this will be covered at the November 30 workshop.

Table 2. – Summary Results of Preferred Testing Approach by Type of Performance Measurement, August and September Separately

Performance Measurement	Difference of "Likes-to-Likes"	BST Test Statistic	Interpretation
Order Completion Interval - Provisioning			For both August and September, the tests done show that statistically significant differences exist favoring BellSouth over the CLECs. For September, moreover, the difference almost certainly are large enough to have operational significance. Both months merit further study and our findings will be given at the November 30th workshop.
August	-0.14 Days	-2.57	
September	-0.59 Days	-8.81	
Maintenance Average Duration			The test statistics for the Maintenance Average Duration are near statistical significance in each month but in opposite directions. No further action seems called for.
August	-1.38 Days	-1.93	
September	2.32 Days	2.43	
OSS Response Time			For OSS Response Time, the test statistics are both positive and for August highly significant, suggesting if anything, that BellSouth is favoring the CLECs over itself.
August	.3197 Seconds	3.78	
September	.1028 Seconds	1.20	

Note: "Statistical Significance" in this report is defined to have been reached when the test statistic is outside the range ± 2. By convention, when the difference is positive, we say the measure suggests that the CLECs resale customers are getting better treatment than BST retail customers. The reverse is true if the sign of the difference is negative. Differences that are +2 or larger are defined therefore to be differences which statistically significantly "favor" the CLECs. Differences that are -2 or smaller are defined to be differences which statistically "favor" BellSouth (see Glossary and Appendix B).

Appendices

A. Credentials and Experience

B. Statistical Calculations for Two Performance Measures -- Completion Interval - Provisioning and Maintenance Average Duration.

C. Order Completion Interval: August Graphics

D. Order Completion Interval: September Graphics

E. Maintenance Average Duration: August Graphics

F. Maintenance Average Duration: September Graphics

G. OSS Average Response Interval

H. LATA: August Graphics

I. LATA: September Graphics

J. Aggregate Assessment of Nondiscrimination - Multiple Test of Parity

K. Glossary of Acronyms and Statistical Terms

Appendix A
Credentials and Experience

sampling and statistical aspects of numerous projects, both large and small, for many corporate and government clients. One of my main professional interests has been in developing ways of turning operating data systems into statistical information systems – an area on which I have published extensively. This was particularly important when I was at the IRS and SSA, which have some of the biggest operating data systems in the Federal Government. My large systems experiences were especially relevant to the analyses in this report which had to be developed from BellSouth's truly massive datasets.

Susan Hinkins Qualifications

1. I have been a professional statistician for 20 years. In 1971 I obtained a B.S. in mathematics from the University of Wisconsin-Madison, an M.S. in mathematics in 1973 and a Ph.D. in statistics in 1979 from Montana State University-Bozeman.

   Since July 1998 I have worked at Ernst & Young LLP where I am now Chief Mathematical Statistician for Statistical Sampling. Before coming to Ernst & Young, I was a senior mathematical statistician at the U.S. Internal Revenue Service. My work at the IRS related primarily to business data, notably that on corporations. I was responsible for developing and maintaining a large and complex sample from a population of approximately 4 million corporate returns.

   I have also worked on a large project funded by the Environmental Protection Agency (EPA) to do an exploratory data analysis of a complex sample of all lakes in the U.S., measuring water chemistry and physical characteristics. While working for the EPA, I also coordinated a study to compare various methods for measuring the level of radon and radon-daughters in homes.

2. I am a member of the American Statistical Association (ASA), the Washington Statistical Society, and I am the Secretary/Treasurer of the Montana Chapter of the ASA. I am also a member of the Institute of Mathematical Statistics and the scientific research society, Sigma Xi.

3. My interests and experience have lead me to specialize in the analysis of complex samples, data imputation, and related estimation issues. I have authored and co-authored numerous papers dealing with these issues. Of particular importance in the current context is the work I have done on replicate variance estimation and its application to complex sample data. The replicate approach we recommend in the report to BellSouth grows out of my theoretical work and prior practical applications.

Ed Mulrow Qualifications

1. I have been a professional statistician for more than 10 years. I obtained a BA in mathematics in 1980 from Illinois Wesleyan University, an MS in mathematics from the

Appendix B
Statistical Calculations for Two Performance Measures – Completion Interval - Provisioning and Maintenance Average Duration

A very important underlying assumption is that the data are the result of a designed experiment, where the "treatments" are assigned randomly to the units of analysis. Any confounding factors or possible blocking effects are taken into account in the design of the experiment and all other assignments are randomized in order to remove bias due to any remaining systematic differences in the units.

For example, in agricultural experiments, location is often considered a blocking effect. Plots that are close together tend to give similar yields due to otherwise uncontrolled effects, such as drainage and fertility gradients. Treatments are assigned at random to plots within each block.

The block effect may be on the mean (fixed effect) or on the variance (random effect), describing correlations between units that are physically close to each other. In this case, we do not have a controlled experiment and this should add an extra note of caution, as emphasized elsewhere.

Consider the simplest general model for the two population comparison. Let x_{1i} denote the performance measurement on BST order i, i=1,...,n_1. Let x_{2j} denote a performance measurement on a CLEC order, j=1,...,n_2. Then the most basic model is

$$x_{1i} = \mu + \varepsilon_i \qquad \text{where } \varepsilon_i \sim \text{IID}(0, \sigma_1^2)$$
$$x_{2j} = \mu + \tau + \delta_j \text{ where } \delta_j \sim \text{IID}(0, \sigma_2^2)$$

and the two means $\bar{x}_1$ and $\bar{x}_2$ are independent. If the underlying distributions are not too skewed and the sample size is reasonably large, then one can reasonably approximate the distribution of the difference in the means as normally distributed

$$\bar{x}_1 - \bar{x}_2 \sim N(\tau, \frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}) \qquad (1)$$

and we are interested in testing whether $\tau = 0$.

FCC Measure. In addition, it can be assumed that the variances are the same in each case, $\sigma_1^2 = \sigma_2^2 = \sigma^2$. That is, it is assumed that the two distributions are the same, except for a possible difference in the means, due to a "treatment" effect.

These are the assumptions used in the FCC measure. A pooled estimate of the variance is used, s_p^2, and the resulting t-test is

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s_p \sqrt{1/n_1 + 1/n_2}}$$

with $n_1 + n_2 - 2$ degrees of freedom. It often turns out to be the case that the sample sizes will be large enough so that the normal, or Z, distribution can be used rather than the t-distribution.

In at least some cases in the Louisiana data that we have studied, it does not appear that the assumption of equal variance is valid. There are two other measures that are being

The first step in the data analysis was to verify the data set. This was done by calculating the estimates and comparing them to the published estimates on the BST internet website (https://clec.bellsouth.com).

Trimming. The underlying distribution of the orders is clearly not normal, but rather skewed with a very long upper-tail. (See Appendices C and D.) Extreme data values may be correct, but since they are rare measurements, they may be considered to be statistical outliers. Or they may be values that should not be in the analysis data set because of errors in the measurement or in selecting the data.

The arithmetic average is extremely sensitive to outliers; a single large value, possibly an erroneous value, can significantly distort the mean value. And by inflating the error variance, this also affects conclusions about whether $\tau = 0$. A useful technique, coming from the field of robust statistical analysis -- for example Huber (1981), or Wiens, Wu, Zhou, (1998) -- is to trim a very small proportion from the tails of the distribution before calculating the means. The resulting mean is referred to as a trimmed mean. Trimming is beneficial in that it speeds the convergence of the distribution of the means to a normal distribution. Only extreme values are trimmed, and in many cases the data being trimmed are, in fact, data that might not be used in the analysis on other grounds.

In the first analysis of the verified Completion Interval-Provisioning measure, after removing data that were clearly in error or were not applicable, we looked at the cases that represented the largest 0.01% of the BST distribution. In the August data, this corresponded to orders with completion intervals greater than 99 days. All of these were BellSouth orders.

In examining the largest 11 individual examples that would be removed from analysis, we found that only 1 of the 11 cases was a valid case where the completion interval was unusually large. The other 10 cases were examples of cases that should not have been included in the analysis.

Of the 11 largest values, eight were orders which are "official BellSouth orders"; these are internal jobs which are not real orders but which needed an order number for tracking purposes. These orders can be identified using the data field "general class service" and such orders were subsequently removed from the analysis data file.

Two of the cases were orders where the customer requested a later due date than offered by BellSouth. The customer called in February to place an order for August, for example. There is no easy way to identify such cases in general, in order to remove them from analysis.[1] The system is not yet stable; hence, there may be other types of data points that should not be included or that are not measured correctly. A very slight trimming is needed in order to put the central limit theorem argument on firm ground.

[1] As a result of our analysis, we eliminated further records from data analysis, both above and below the 99 days, using the information regarding general class of service (official BellSouth orders). The subsequent trimming only removed 15 BST cases from the August BST file and 13 BST cases in September.

of "new" vs "change" vs "transfer". It appears, for instance, that a "new" order takes noticeably longer to finish than a "change" or "transfer."

Finally, if one were designing a study to compare the CLEC to the BST "treatment," one would make sure that the same number of CLEC and BST cases were assigned by the location, by time, and by the type of order. By using random assignment to assign a population unit as either a CLEC or a BST, one would be protected against the possibility of other unsuspected sources of bias. That is, if there is another variable that affects the performance measure, by using random assignment one is likely to assign approximately the same proportion of BST and CLEC orders across the distribution of this variable.

Without random assignment, there is the possibility that the distribution of these confounding variables is very different for the BST orders than for the CLEC. For example, if "new" service tends to take longer than the other service types and one month 50% of the CLEC orders are "new" compared to 25% of the BST orders, then the simple comparison will be biased. The bias may work in either direction, depending on the distribution of the observed data. In the example above, the simple estimate would overestimate the difference between the BST and the CLEC performance, making the CLEC customer performance look worse than that for BST customers since CLEC provisioning would appear to take longer. If the distribution had been out of balance in the other direction, with a higher percentage of new BST orders than new CLEC orders, then the simple estimate would have made the CLEC performance look better than it was.

In summary, the assumptions made for both the FCC and the LCUG tests are not valid. The observations are not likely to be independent and identically distributed. Assumption failures may affect both the numerator (the point estimate of the difference) and the denominator (the estimate of its variability). Clustering effects in the data, resulting in a positive correlation between observations in the same wire center, would mean that the variance estimates used in both the FCC and the LCUG measures are biased. And, in particular, they will underestimate the variability in the differences. In addition, effects due to time or order type may bias the estimate of difference.

Adjusted Estimates. In an observational study, bias is a major concern. There are many references for estimation techniques using data from observational studies. There are two principal strategies for reducing bias in observational studies (Cochran and Rubin, 1973): matching and model related adjustments. When the confounding variables are classification measurements, as they are in this case (new vs. change, time 1 vs. time 2 etc), then both matching and model based strategies lead essentially to the same simple adjustment.

Suppose there are j=1,...,J classes defined by the confounding variables. (One class might be new service in a residence, dispatched service, with less than 10 circuits, finished in time period 1, in wire center "a.") Suppose there are n_{2j} CLEC cases and n_{1j} BST cases in class j with $n_{2j} \geq 0$. The following

provider, the mean is 2 days for class j=1, new orders, and the mean is 1 day for class 2, change orders.

Suppose we want to adjust provider A's distribution to compare to provider B. Then in the notation used in this appendix, we have

$n_{11}=30,\ n_{12}=90,\ n_1=120$

$n_{21}=60,\ n_{22}=30,\ n_2=90$

Using equation (3), the estimate of the difference would be

$$\hat{D} = \frac{60*(2-2)+30*(1-1)}{90} = 0.$$

The unadjusted means are 1.25 for provider A and 1.67 for provider B. The adjusted mean for provider A would be calculated using weights $w_j = n_{2j}/n_{1j}$, or in this case

$w_1 = 60/30 = 2$
$w_2 = 30/90 = 1/3$

and the adjusted mean for provider A would be

$$\bar{x}_{1A} = \frac{2*30*2+\frac{1}{3}*90*1}{2*30+90/3} = 1.67.$$

Because there was no discrepancy in the means, by class, the adjusted mean for provider A is equal to the mean for provider B.

Replicate Variance Estimation

The estimate $\hat{D}$ from equation (3) or (4) then is a better estimate of the difference between the mean performance for the BST orders and the mean performance for the CLEC orders. We now need a variance estimate for $\hat{D}$.

Replicate variance estimation can result in a nearly unbiased estimate of the variance for complex data structures like those which exist with the BellSouth data. A description of the basic technique can be found in Wolter (1985). The basic idea is to randomly divide the given sample into G groups, where each group has approximately the same number of wire centers. In each group g, calculate an estimate of the parameter of interest, say $\bar{d}_g$. Let $\bar{\bar{d}}$ be the average of the replicate means $\bar{d}_g$. Then the replicate variance estimate of $\bar{\bar{d}}$ is

$$v_1 = \mathrm{Var}(\bar{\bar{d}}) = \frac{1}{G}\frac{1}{(G-1)}\sum_g (\bar{d}_g - \bar{\bar{d}})^2 \quad . \quad (5)$$

In our problem, however, the estimate we are interested in is $\hat{D}$ which is not generally equal to $\bar{\bar{d}}$. We can use v_1 as an estimate of $\hat{D}$ or the alternative estimator

$$v_2 = \mathrm{Var}(\hat{D}) = \frac{1}{G}\frac{1}{(G-1)}\sum_g (\bar{d}_g - \hat{D})^2 \quad . \quad (6)$$

activity. The LATA were ordered and the wire centers were ordered within LATA. Within the first LATA, the wire centers were ordered from largest to smallest. In the next LATA, the wire centers were ordered from smallest to largest, etc. We then systematically divided the 232 wire centers into 30 roughly equal groups (of about 7 wire centers). This was done by taking the ordered list and splitting it into "zones" of 30 wire centers each, randomly assigning a wire center to a group until all were assigned, then repeating the process independently for the next zone of 30 wire centers, and so on until all had been assigned.

Estimator Construction. The estimator $\hat{D}$ is calculated as in equation (3), using classes defined by wire center and time at least. The replicates are assigned, by wire center. The adjusted replicate estimates $\bar{d}_{Ag}$, g= 1,.. 30, are calculated using equation (3) but summing only over the cases in the wire centers defined to be in replicate g.

These $\bar{d}_{Ag}$ are identically distributed by construction and independent by randomization. If there is a lot of CLEC activity, they may also be approximately normally distributed. Using the replicate structure we estimate the variance for the adjusted estimate as

$$s_{rA}^2 = \frac{1}{29}\sum_{g=1}^{30}\left(\bar{d}_{Ag} - \hat{D}\right)^2$$

and the resulting statistic

$$t = \frac{\hat{D}}{s_{rA}/\sqrt{30}}$$

is compared to the Student's t-distribution with 29 degrees of freedom, as the reference distribution, for calculating p-values. The p-values are the probability of seeing a value as extreme or more extreme then the observed value of t. That is, if t is positive, the probability of a value greater than or equal to t is calculated, using the Student's t with 29 degrees of freedom as the reference distribution. If t is negative, the probability of a value less than or equal to the observed t is calculated.

Using the replicate variance estimate applied to the adjusted estimate of the difference protects against model misspecification. This test does not rely on the assumption that the data are IID and it corrects for bias due to the structure of the data. Using this method, a confidence interval can be constructed for the difference in the means. A reasonable interval is the 95% confidence interval. Using a Z-test, the multiplier is 1.96 which is often rounded up to 2.00. Using a t-distribution with 29 degrees of freedom, the coefficient is 2.045. For all practical purposes, these are equivalent. There is no loss in power in adopting the replicate measure over the FCC or the LCUG measure.

The Six Test Statistics Compared in the Main Report

The test statistic described in the previous section is the method we propose for the comparisons, and, in the main report, it is referred to as the BellSouth test for adjusted data. It adjusts the BellSouth data to make it more similar in

Performance Measured as a Proportion

If the performance measure is a proportion or a percentage of cases which possess some characteristic, such as the proportion of orders taking less than two days to finish, then these methods also apply. It may not be immediately obvious, but proportions can be placed in the same framework as sample means.

A proportion can be calculated by measuring a variable x_i for each case, where $x_i=1$ if the unit has the characteristic of interest (less than 2 days to complete, for example) and $x_i=0$ if the unit does not have the characteristic of interest. If we have n cases, then the proportion p of orders with the characteristic of interest is calculated as the mean of the x values, $\bar{x}$.

In this way, the tests can be formulated for proportions using the equations given in this appendix. For example, the sample means within classes become p_{1j} and p_{2j}, the proportion of BellSouth orders and CLEC orders, respectively, in class j. The adjusted estimate of the difference is then

$$\hat{D} = \sum_j n_{2j}(p_{1j} - p_{2j}) \Big/ n_2$$

Outline for the Proposed Replicate Data Analysis

The proposed BellSouth procedure is the replicate method applied to the adjusted data. The steps in the data analysis and test calculation that we propose can be summarized as follows:

1. Verify that we have the correct data set, by comparing to the published estimates on the BST internet website (https://clec.bellsouth.com).
2. Remove any additional data values that are not pertinent to analysis (official BellSouth orders for example)
3. If necessary, trim a very small proportion from the tail(s) of the distribution. (In some cases, the original BellSouth data procedure already included an upper or lower bound on data to be used for analysis.)
4. Put the replicate indicator on the data file and define the time classification.
5. Determine if there are other important classifications that should be used as well, such as order type.
6. For every class defined in steps 4 and 5, calculate the difference $d_j=\bar{x}_{1j}-\bar{x}_{2j}$. In one pass through the data files, a file can be built containing n_{2j}, n_{1j}, and d_j for all classes j.
7. From this data file, estimates of the difference in means and t-tests to test the hypothesis of nondiscriminatory treatment can be calculated for any level of aggregation at the LATA level and above.

Rosenbaum, P. (1987), The Role of a Second Control Group in an Observational Study, *Statistical Science*, **2**, 292-316

Snedecor, G. and Cochran, W. (1967), *Statistical Methods*, Iowa State University Press, Ames, Iowa.

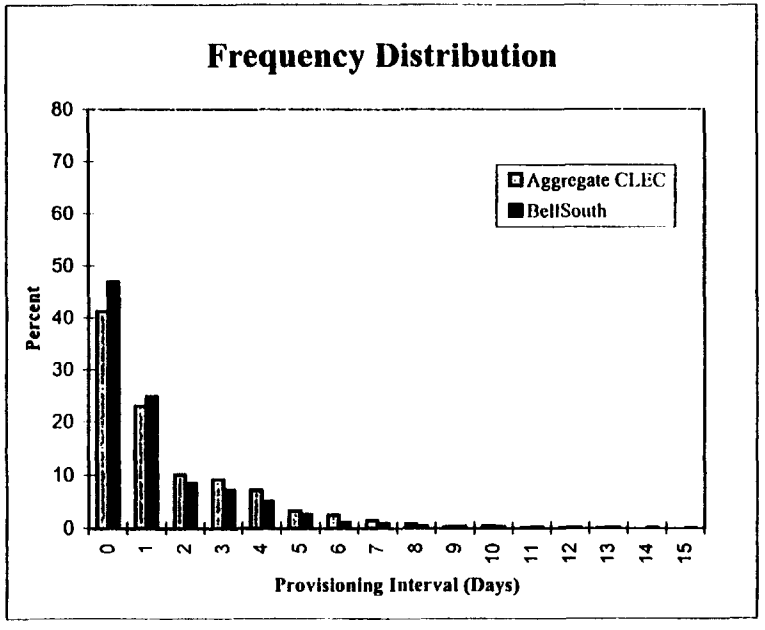
Wiens, D.P., Wu, E.K.H, and Zhou, J. (1998), On the trimmed mean and minimax-variance L-estimation in Kolmogorov neighborhoods, *The Canadian Journal of Statistics*, **26**, 231-238.

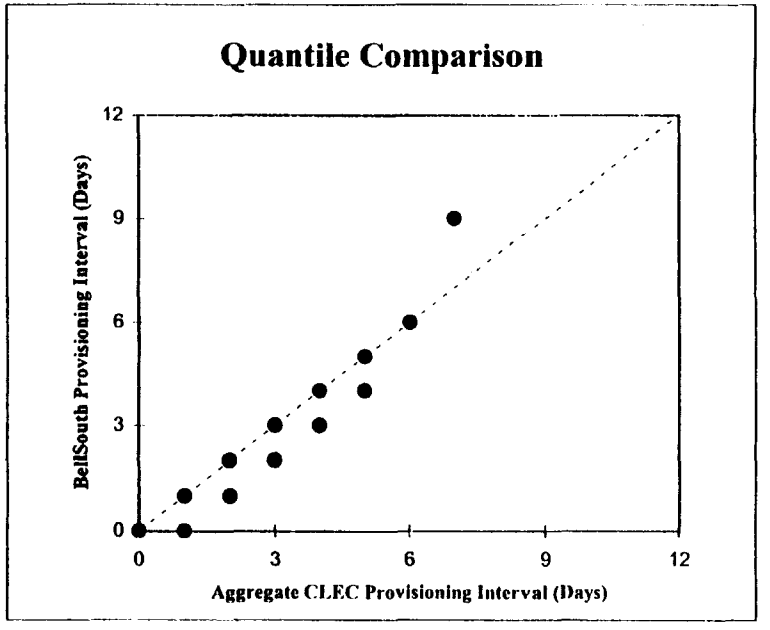
Wolter, K. (1985), *Introduction to Variance Estimation*, Springer-Verlag, New York.s

Appendix C
Order Completion Interval (OCI) - August Graphics

I. Graphical Representations

Adjusted
August BellSouth and CLEC Completion Interval-Provisioning
All Cases





Descriptive Measures

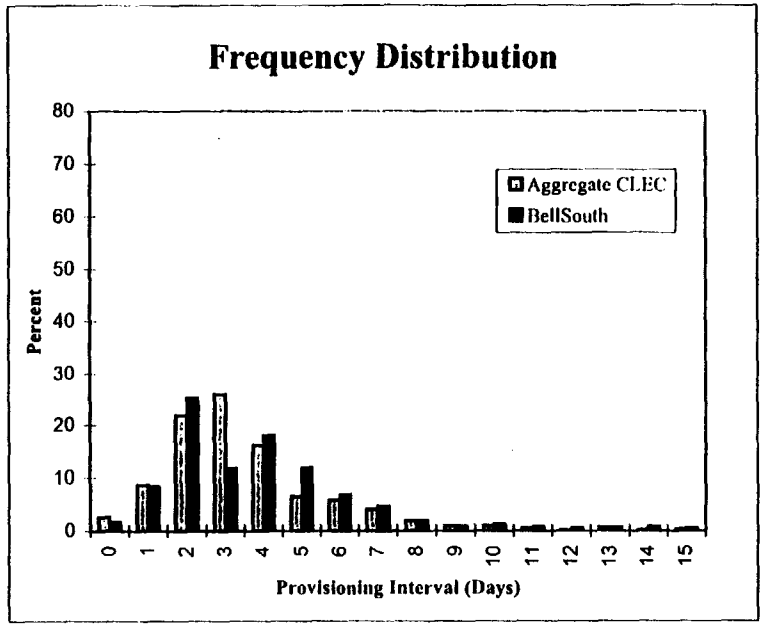
Service Provider	Mean	Standard Deviation
BST	1.48	2.95
CLEC	1.62	2.26
Difference	-0.14	

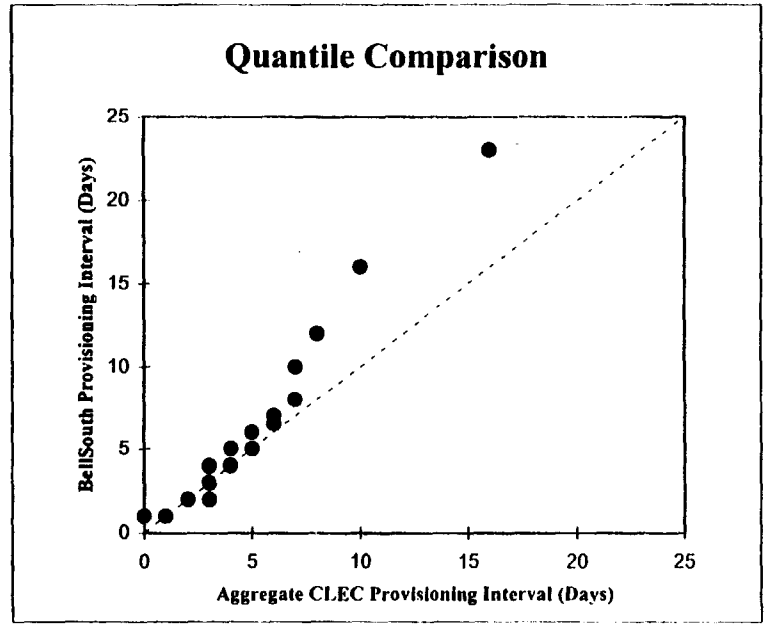
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-6.08	0.0000
FCC	-6.13	0.0000
BST	-2.57	0.7774

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.
The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
August BellSouth and CLEC Completion Interval-Provisioning
Dispatched Cases





Descriptive Measures

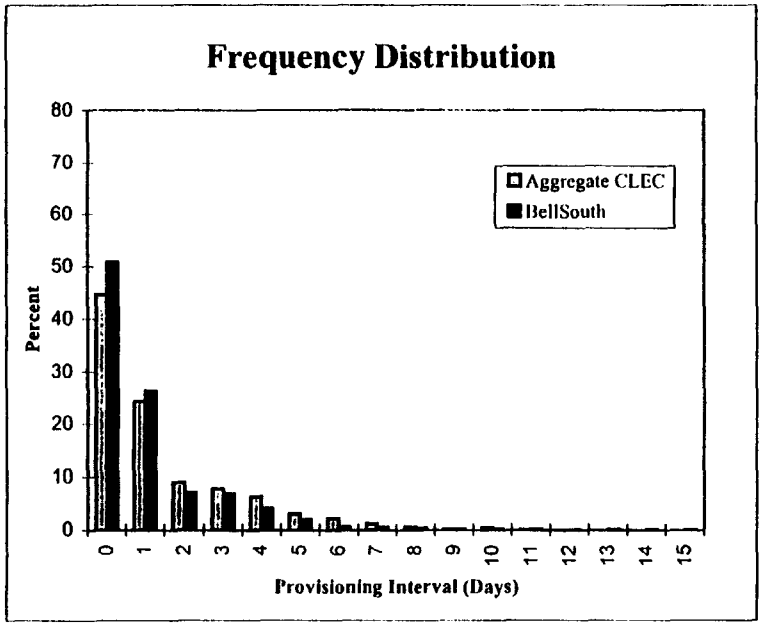
Service Provider	Mean	Standard Deviation
BST	4.88	5.84
CLEC	3.99	3.77
Difference	0.89	

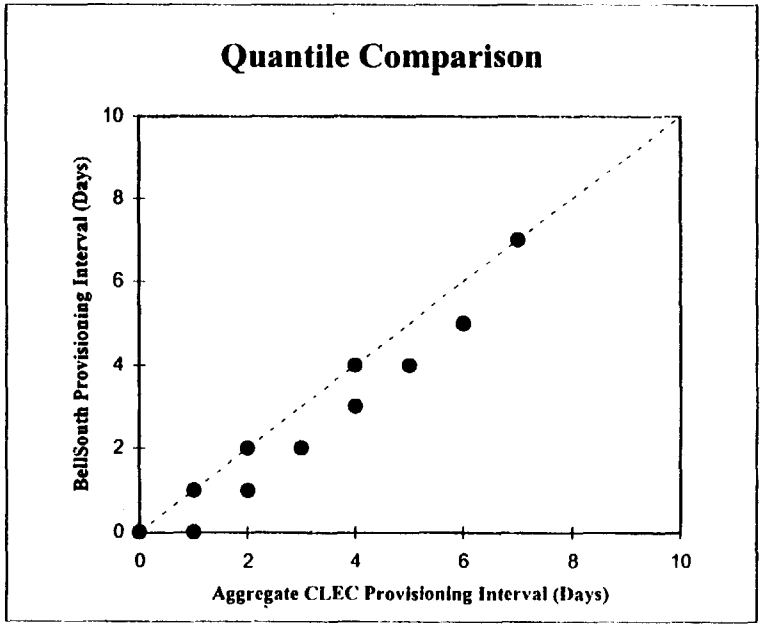
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	5.34	0.0000
FCC	5.42	0.0000
BST	6.41	0.0000

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.
The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
August BellSouth and CLEC Completion Interval-Provisioning
Non-Dispatched Cases





Descriptive Measures

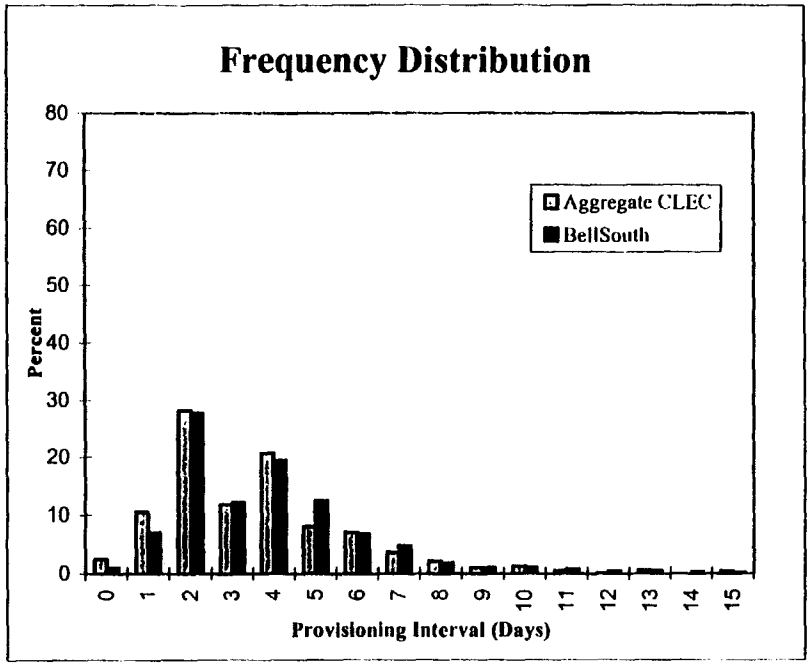
Service Provider	Mean	Standard Deviation
BST	1.18	2.33
CLEC	1.41	1.94
Difference	-0.23	

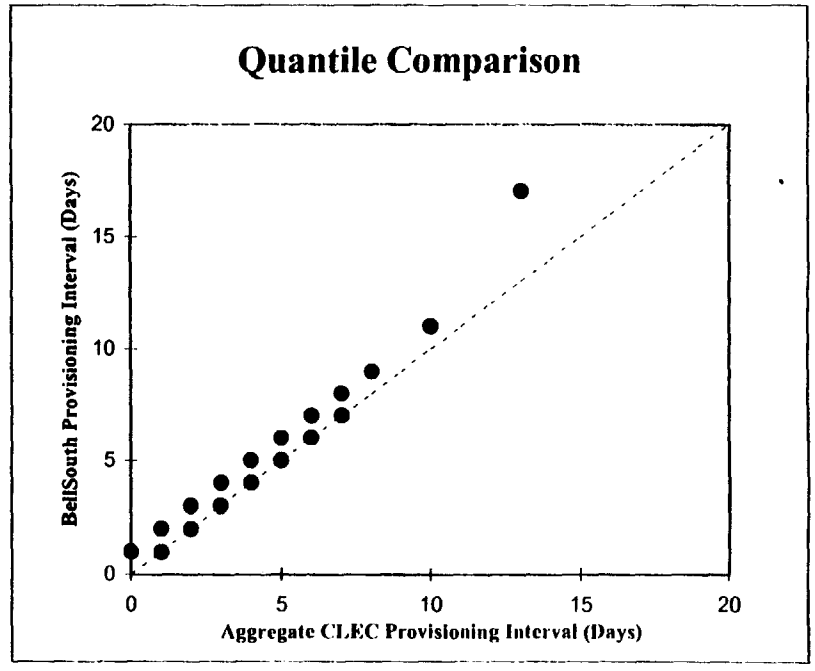
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-11.86	0.0000
FCC	-11.93	0.0000
BST	-4.39	0.0068

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.
The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
August BellSouth and CLEC Completion Interval-Provisioning
Dispatched, Residential, All Circuits





Descriptive Measures

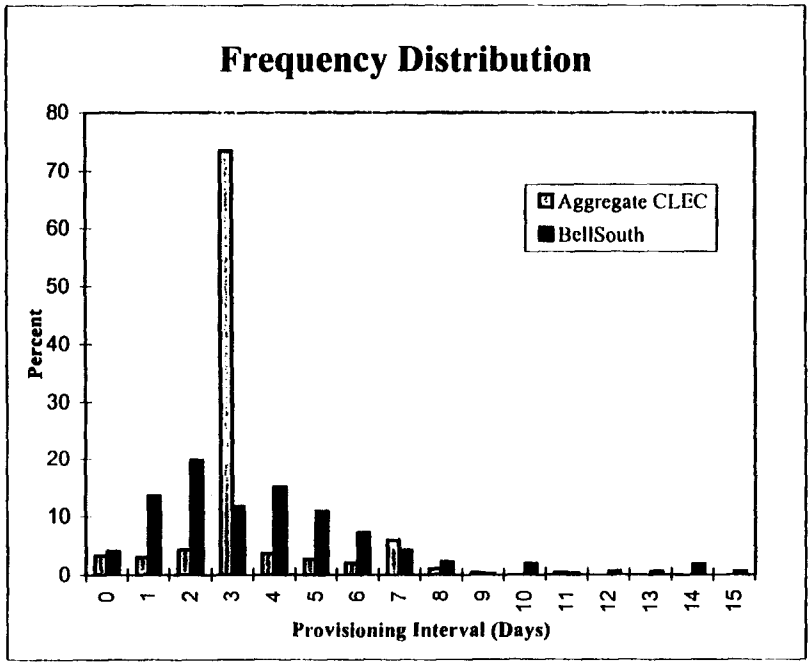
Service Provider	Mean	Standard Deviation
BST	4.34	4.19
CLEC	3.84	3.38
Difference	0.50	

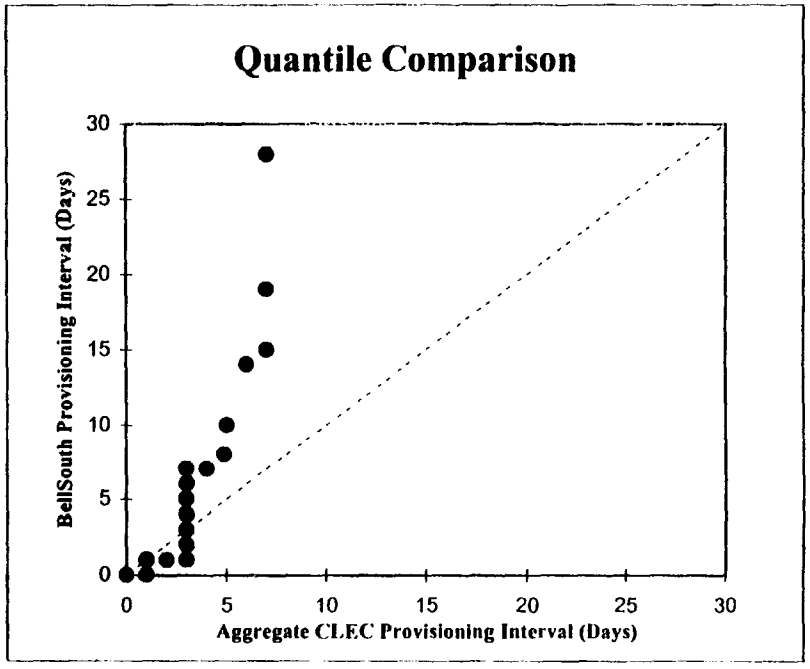
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	3.60	0.0159
FCC	3.63	0.0139
BST	4.40	0.0067

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
August BellSouth and CLEC Completion Interval-Provisioning
Dispatched, Business, All Circuits





Descriptive Measures

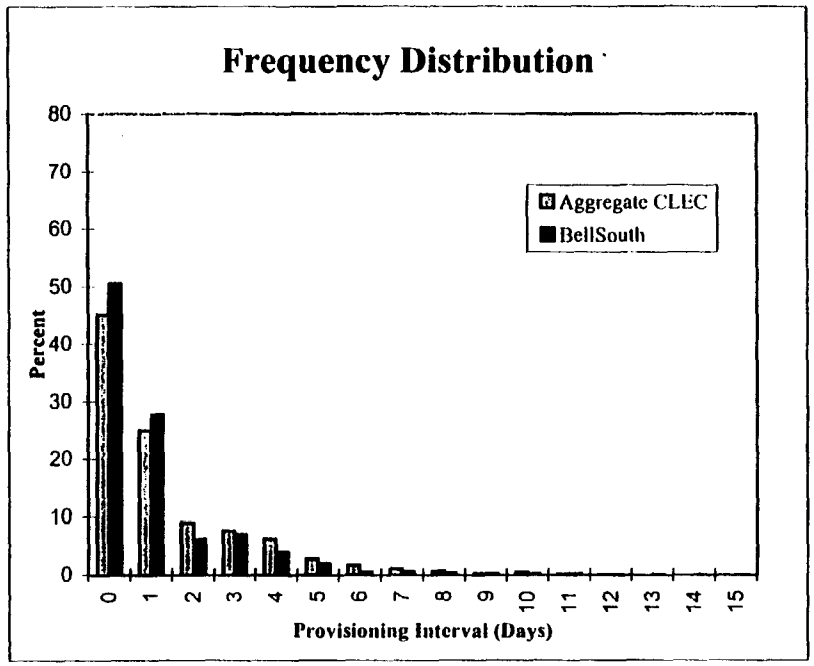
Service Provider	Mean	Standard Deviation
BST	5.27	7.25
CLEC	3.28	1.50
Difference	1.99	

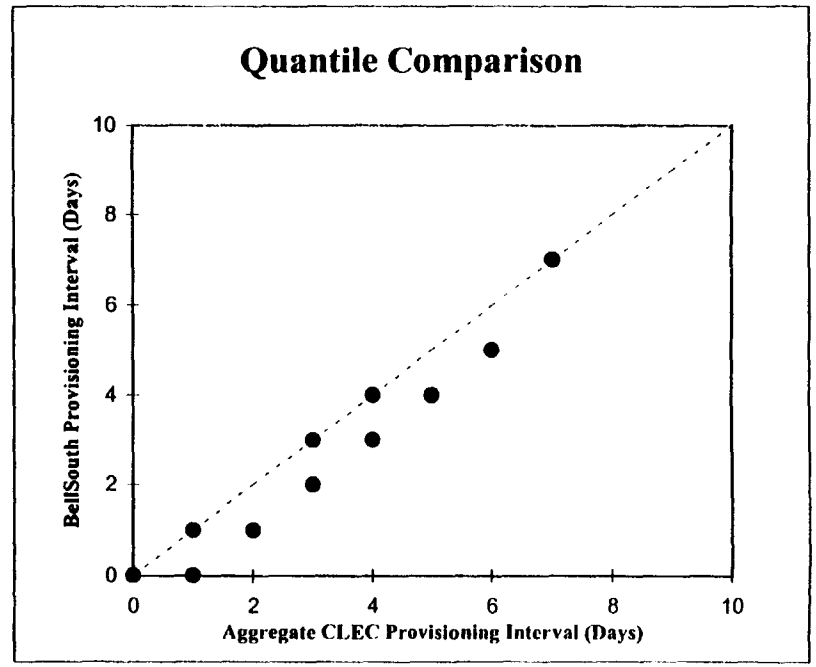
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	4.63	0.0002
FCC	4.75	0.0001
BST	2.48	0.9762

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.
The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
August BellSouth and CLEC Completion Interval-Provisioning
Non-Dispatched, Residential, All Circuits





Descriptive Measures

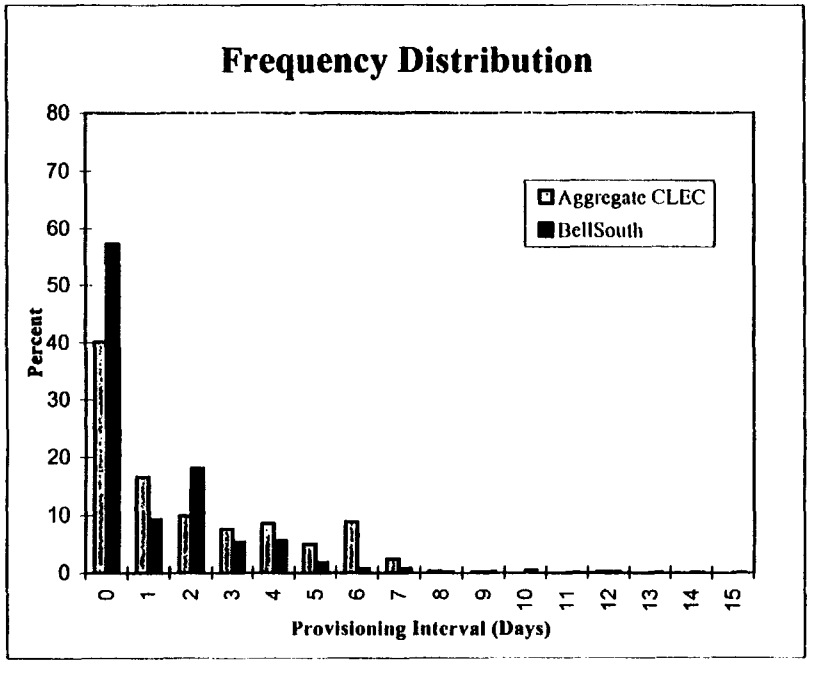
Service Provider	Mean	Standard Deviation
BST	1.15	2.26
CLEC	1.35	1.87
Difference	-0.20	

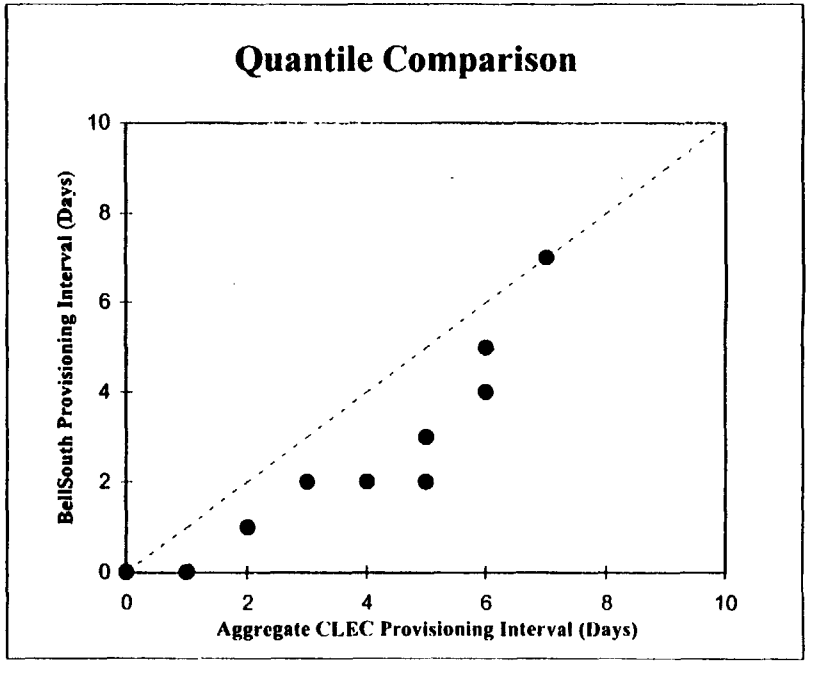
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-10.38	0.0000
FCC	-10.44	0.0000
BST	-4.41	0.0066

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.
The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
August BellSouth and CLEC Completion Interval-Provisioning
Non-Dispatched, Business, All Circuits





Descriptive Measures

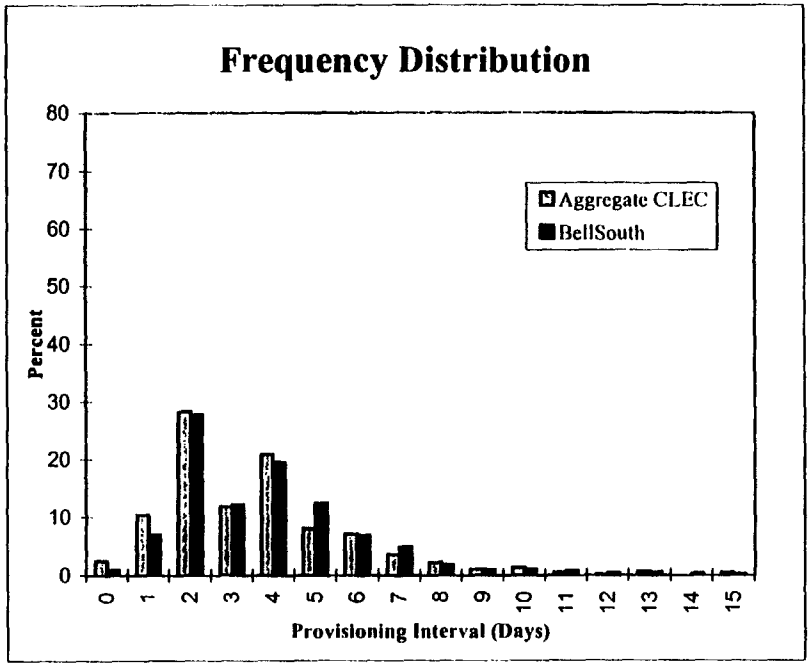
Service Provider	Mean	Standard Deviation
BST	1.20	2.47
CLEC	1.98	2.37
Difference	-0.78	

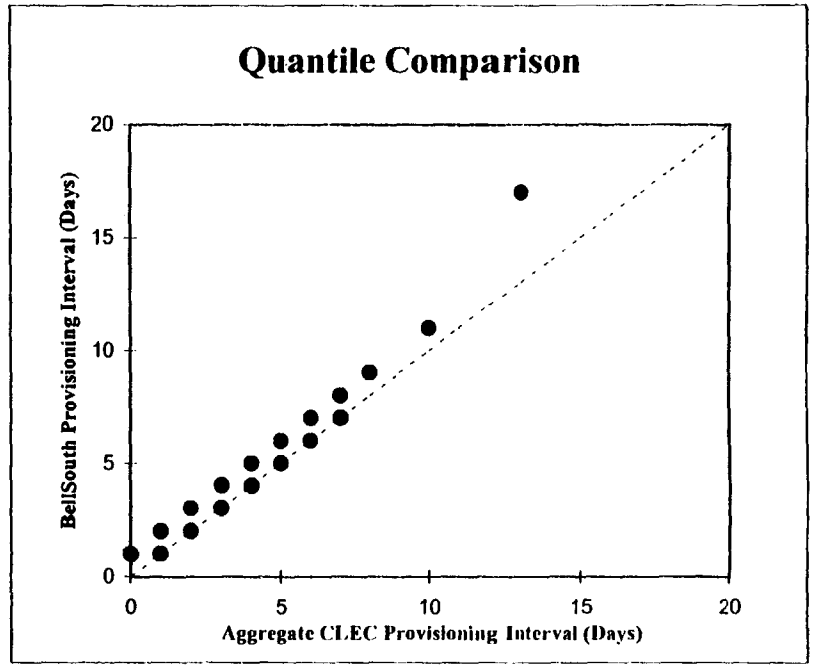
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-10.42	0.0000
FCC	-10.43	0.0000
BST	-3.55	0.0686

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.
The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
August BellSouth and CLEC Completion Interval-Provisioning
Dispatched, Residential, Less Than 10 Circuits





Descriptive Measures

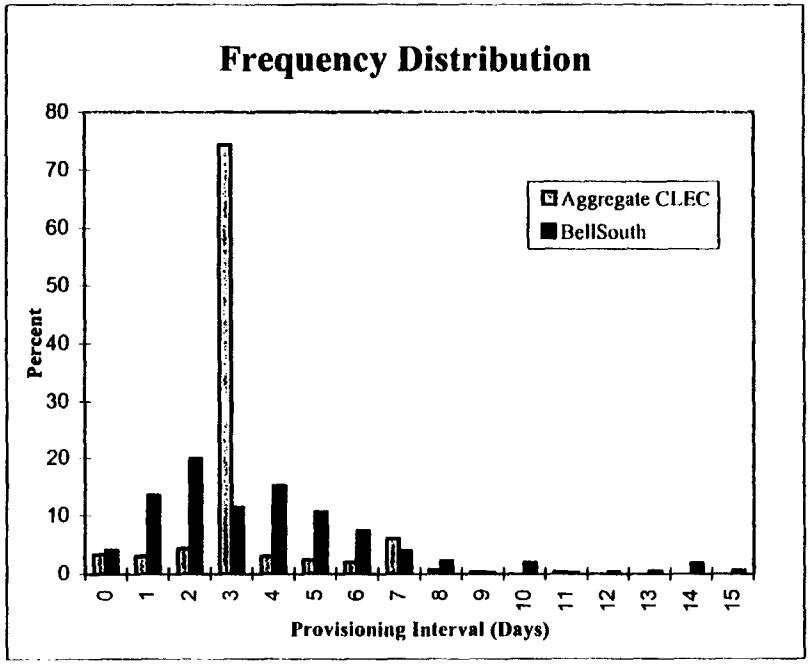
Service Provider	Mean	Standard Deviation
BST	4.34	4.17
CLEC	3.85	3.39
Difference	0.49	

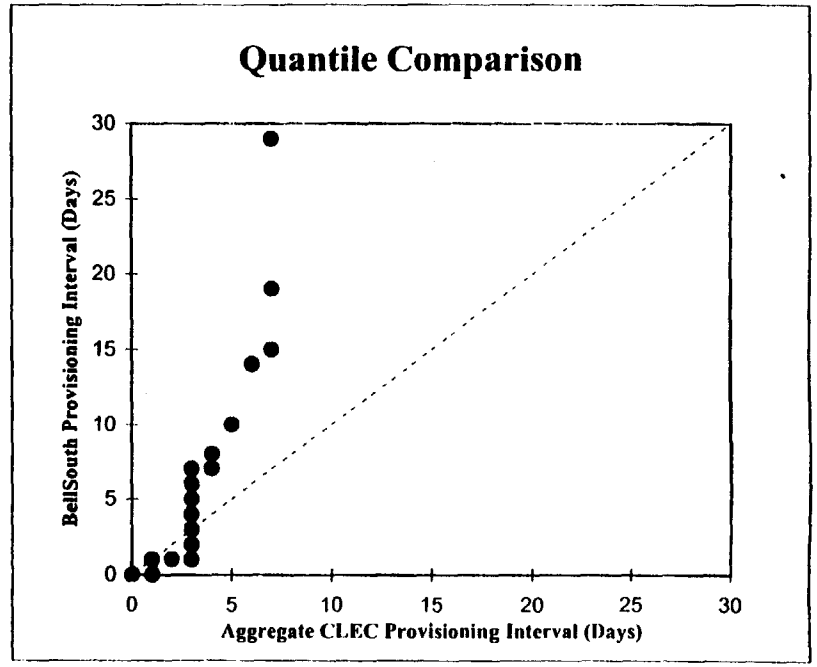
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	3.53	0.0210
FCC	3.56	0.0185
BST	4.40	0.0068

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
August BellSouth and CLEC Completion Interval-Provisioning
Dispatched, Business, Less Than 10 Circuits





Descriptive Measures

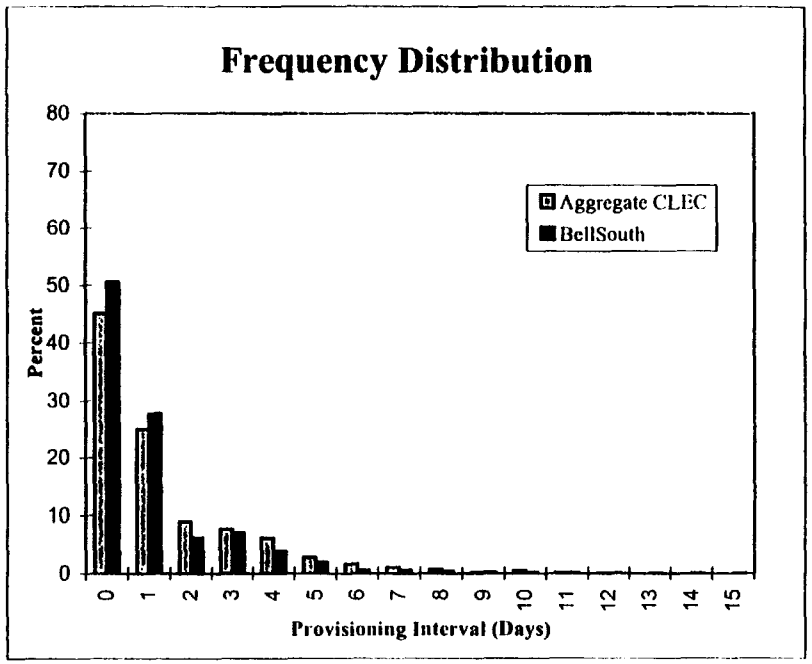
Service Provider	Mean	Standard Deviation
BST	5.26	7.29
CLEC	3.26	1.48
Difference	2.00	

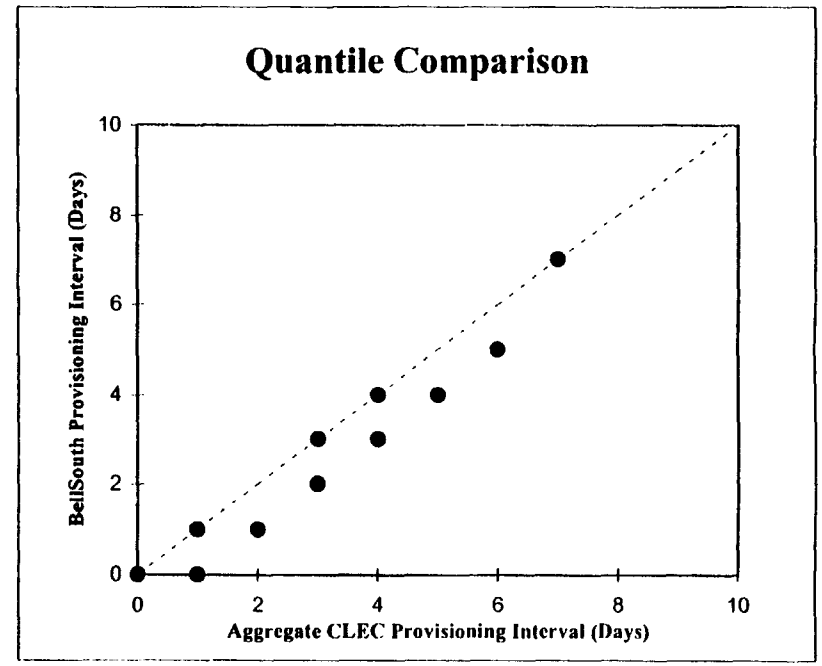
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	4.59	0.0002
FCC	4.71	0.0001
BST	2.50	0.9451

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.
The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
August BellSouth and CLEC Completion Interval-Provisioning
Non-Dispatched, Residential, Less Than 10 Circuits





Descriptive Measures

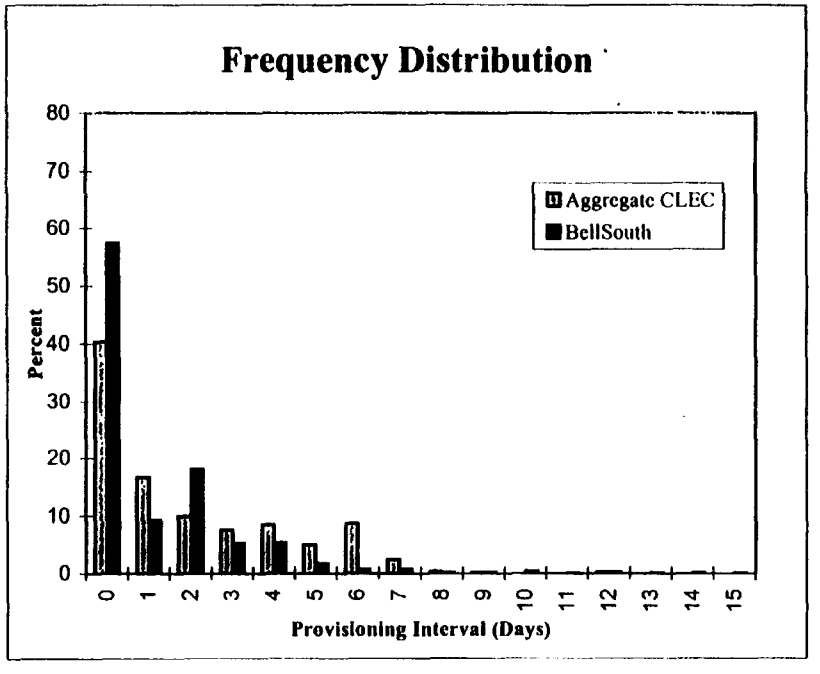
Service Provider	Mean	Standard Deviation
BST	1.15	2.26
CLEC	1.35	1.87
Difference	-0.20	

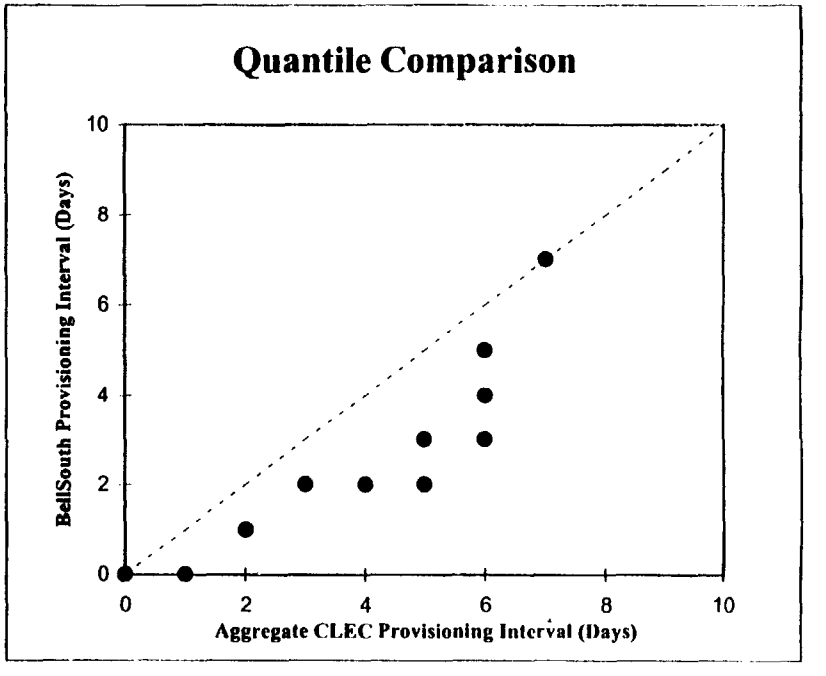
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-10.38	0.0000
FCC	-10.44	0.0000
BST	-4.41	0.0066

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.
The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
August BellSouth and CLEC Completion Interval-Provisioning
Non-Dispatched, Business, Less Than 10 Circuits





Descriptive Measures

Service Provider	Mean	Standard Deviation
BST	1.19	2.46
CLEC	1.97	2.37
Difference	-0.78	

Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-10.44	0.0000
FCC	-10.46	0.0000
BST	-3.57	0.0660

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.
The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

SQM: Order Completion Interval

AUGUST

	NO DISPATCH															
	SAME DAY		1 DAY		2 DAYS		3 DAYS		4 DAYS		5 DAYS		> 5 DAYS		AVG. (DAYS)	
	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts
CLEC 1																
LOUISIANA																
CLEC AGGREGATE																
LOUISIANA																
- RESALE RESIDENCE	44.84%	0.00%	24.94%	0.00%	9.08%	0.00%	7.95%	0.00%	6.20%	0.00%	2.81%	0.00%	4.18%	0.00%	1.38	0.00
- RESALE BUSINESS	40.00%	0.00%	17.32%	0.00%	10.54%	20.00%	7.78%	20.00%	8.12%	20.00%	5.02%	0.00%	11.21%	40.00%	1.93	4.20
- UNE LOOPS WITH LNP																
BST																
LOUISIANA																
- RETAIL RESIDENCE	58.29%	0.00%	24.08%	0.00%	4.66%	0.00%	6.80%	0.00%	2.89%	0.00%	1.67%	0.00%	1.62%	0.00%	0.92	0.00
- RETAIL BUSINESS	64.32%	26.88%	9.88%	18.28%	13.88%	4.30%	4.34%	15.05%	4.92%	7.53%	0.84%	2.15%	1.83%	25.81%	1.05	7.27

	NO DISPATCH															
	0-5 DAYS		6-10 DAYS		11-15 DAYS		16-20 DAYS		21-25 DAYS		26-30 DAYS		> 30 DAYS		AVG. (DAYS)	
	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts
CLEC 1																
LOUISIANA																
CLEC AGGREGATE																
LOUISIANA																
- RESALE DESIGN	80.68%	0.00%	17.05%	0.00%	0.00%	0.00%	1.14%	0.00%	0.00%	0.00%	1.14%	0.00%	0.00%	0.00%	3.91	0.00
- UNE DESIGN	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00
- UNE NON-DESIGN	77.78%	0.00%	0.00%	0.00%	11.11%	0.00%	0.00%	0.00%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	4.67	0.00
BST																
LOUISIANA																
- RETAIL DESIGN	28.57%	0.00%	15.87%	0.00%	26.98%	0.00%	6.35%	0.00%	4.76%	0.00%	1.59%	0.00%	15.87%	0.00%	19.14	0.00

Definitions

issue date -- Date service order is entered into the system (not necessarily same as application date)

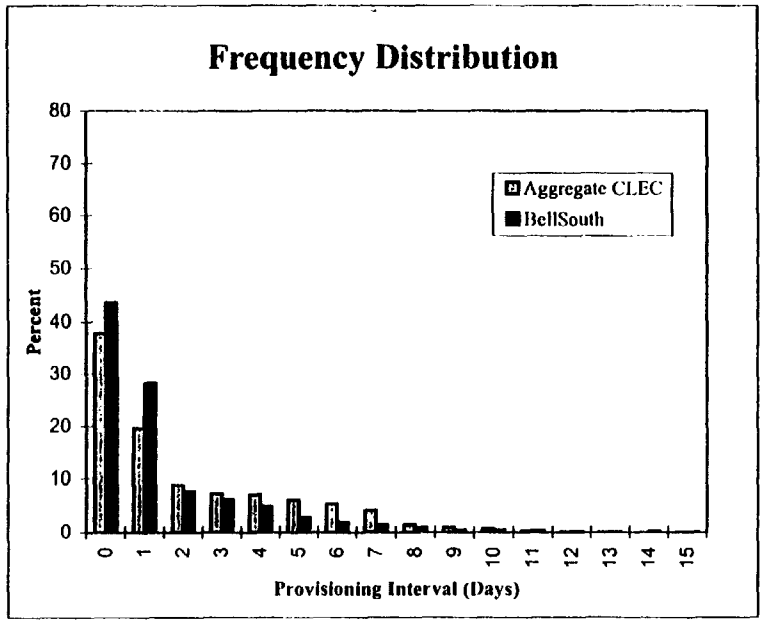
completion date -- Date on which service order is completed

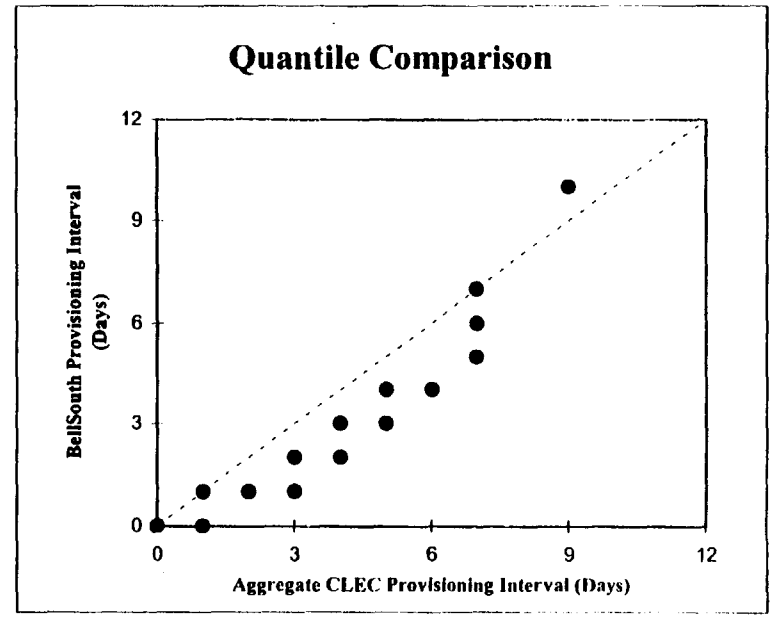
order completion interval -- computed as order completion interval = completion date - issue date

Appendix D
Order Completion Interval (OCI) - September Graphics

I. Graphical Representations

Adjusted
September BellSouth and CLEC Completion Interval-Provisioning
All Cases





Descriptive Measures

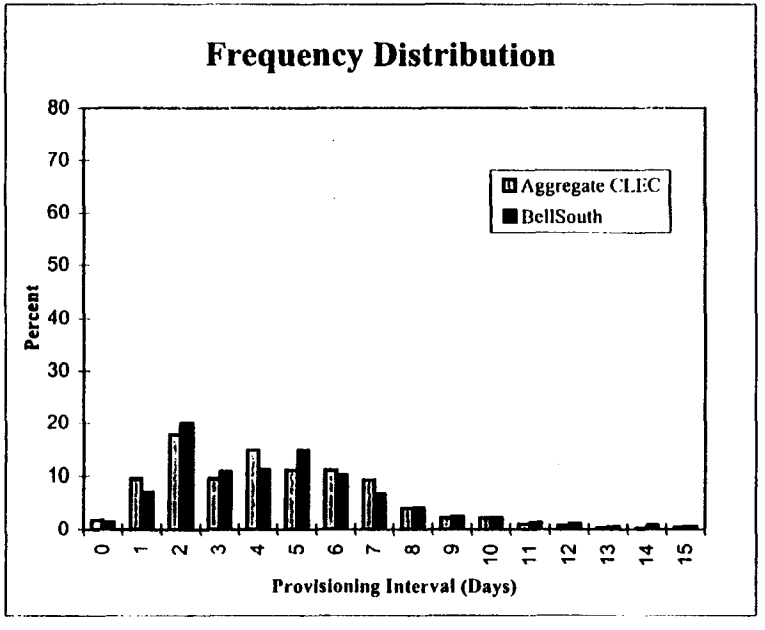
Service Provider	Mean	Standard Deviation
BST	1.61	3.00
CLEC	2.20	2.85
Difference	-0.59	

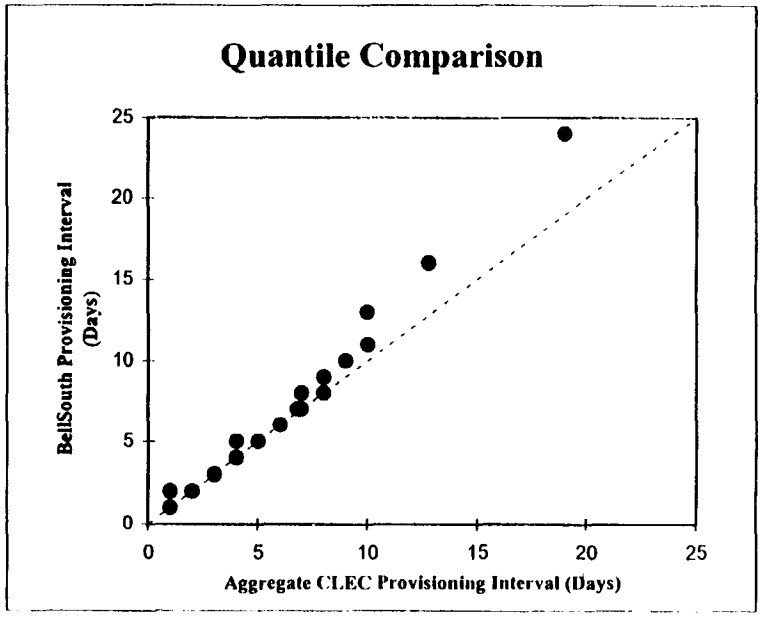
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-24.63	0.0000
FCC	-24.68	0.0000
BST	-8.81	0.0000

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
September BellSouth and CLEC Completion Interval-Provisioning
Dispatched Cases





Descriptive Measures

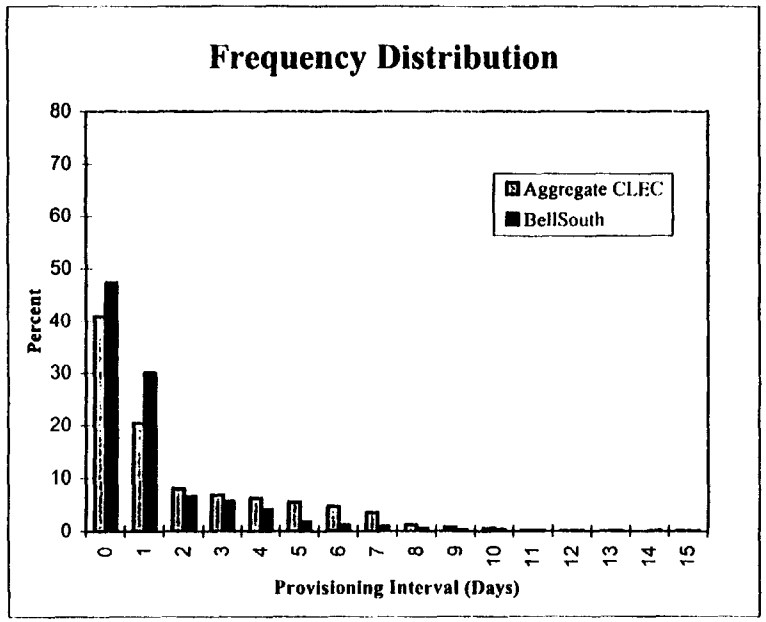
Service Provider	Mean	Standard Deviation
BST	5.52	5.59
CLEC	5.07	4.55
Difference	0.45	

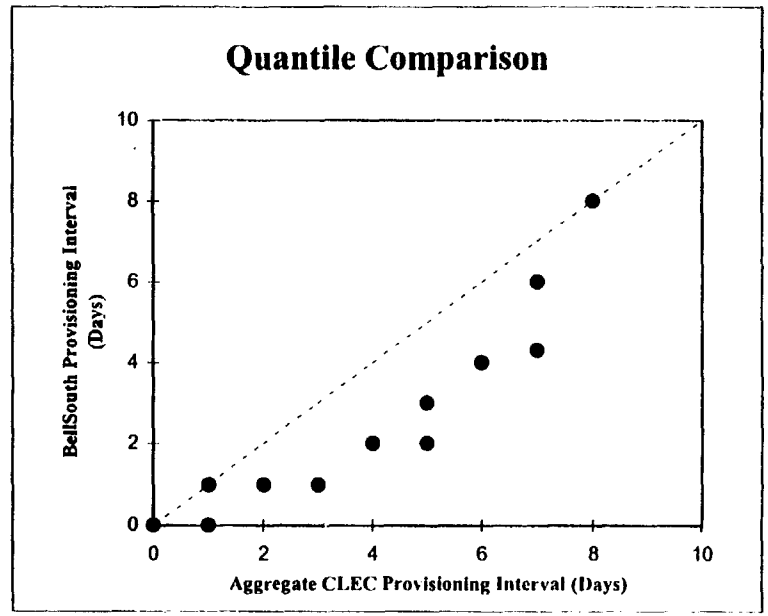
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	2.87	0.2065
FCC	2.90	0.1884
BST	2.57	0.7876

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
September BellSouth and CLEC Completion Interval-Provisioning
Non-Dispatched Cases





Descriptive Measures

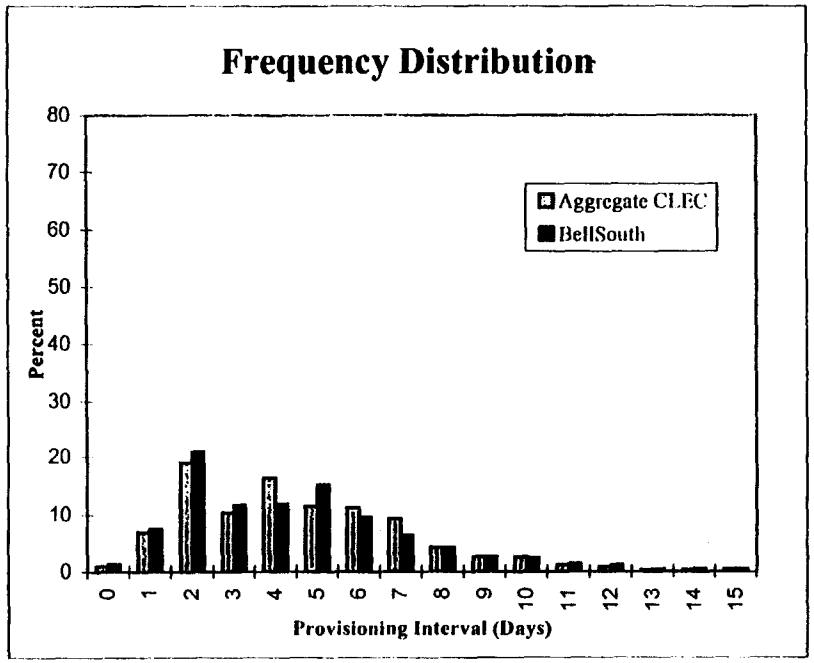
Service Provider	Mean	Standard Deviation
BST	1.27	2.38
CLEC	1.95	2.50
Difference	-0.68	

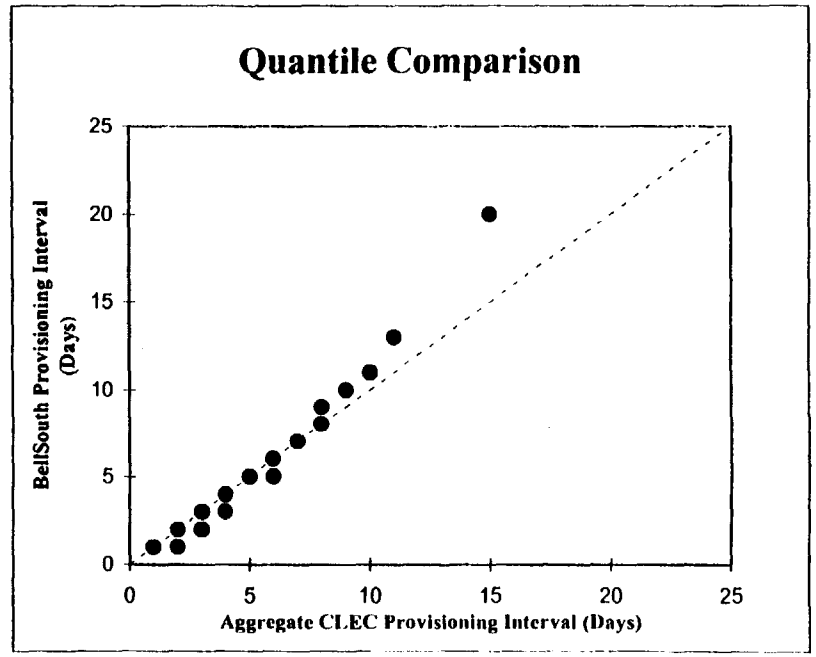
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-34.35	0.0000
FCC	-34.27	0.0000
BST	-9.93	0.0000

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
September BellSouth and CLEC Completion Interval-Provisioning
Dispatched, Residential, All Circuits





Descriptive Measures

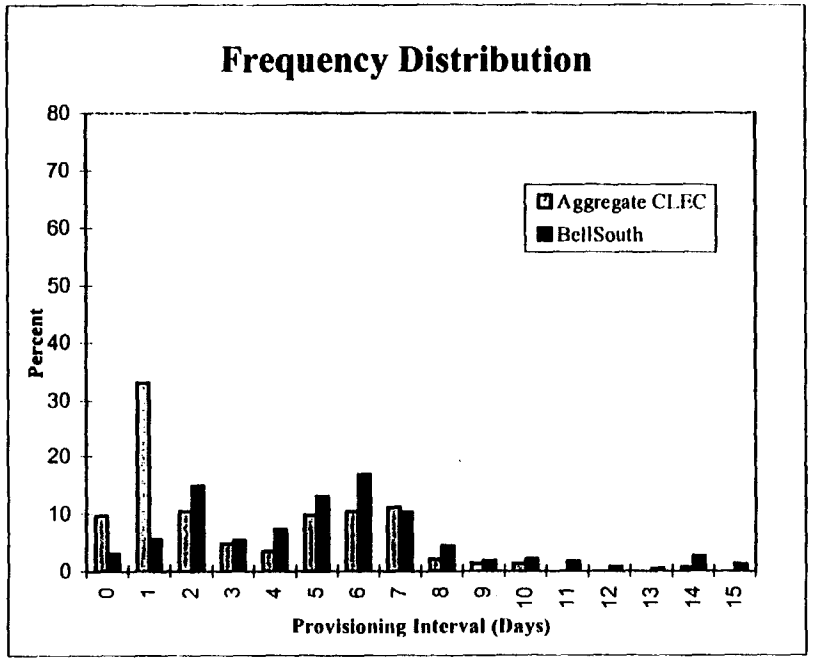
Service Provider	Mean	Standard Deviation
BST	5.05	4.48
CLEC	4.93	3.59
Difference	0.12	

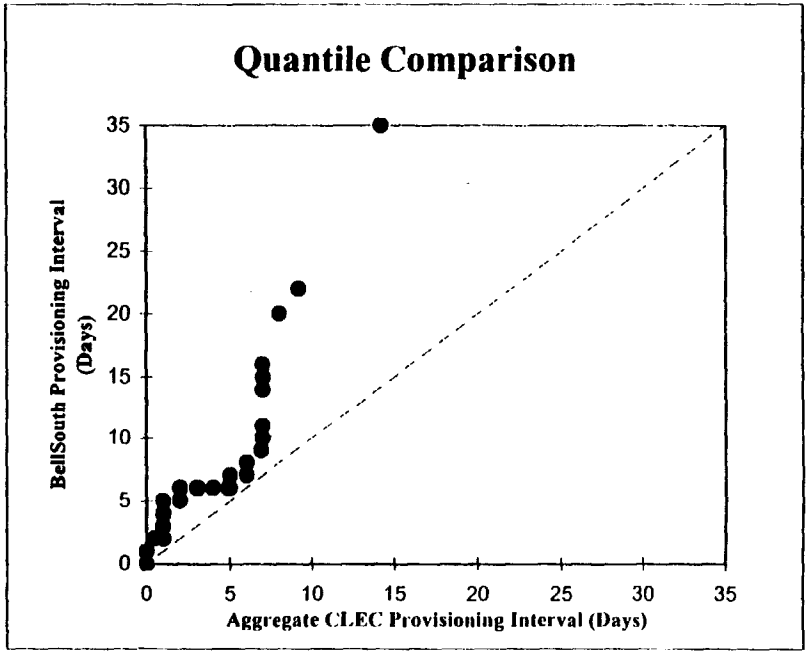
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	0.89	18.6182
FCC	0.90	18.3006
BST	0.78	22.0733

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.
The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
September BellSouth and CLEC Completion Interval-Provisioning
Dispatched, Business, All Circuits





Descriptive Measures

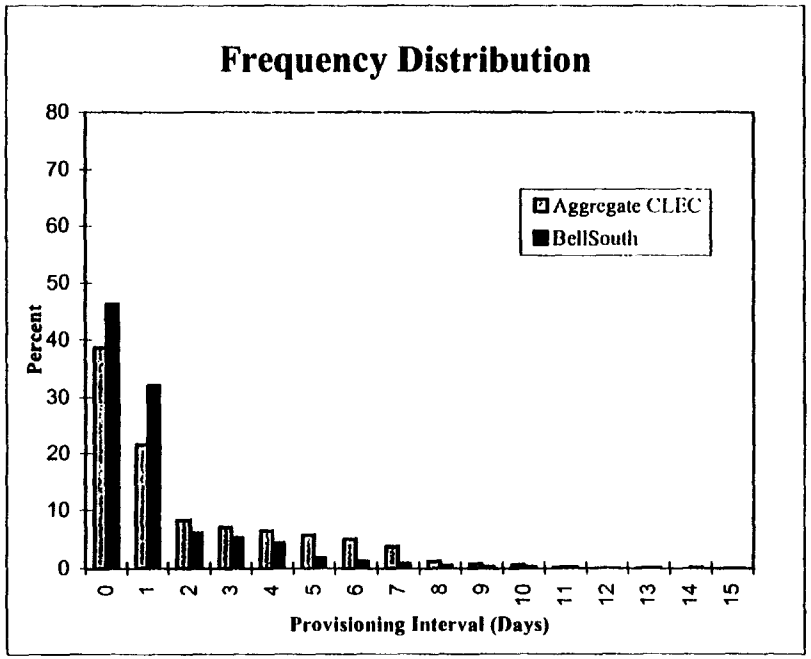
Service Provider	Mean	Standard Deviation
BST	7.20	8.20
CLEC	3.75	4.39
Difference	3.45	

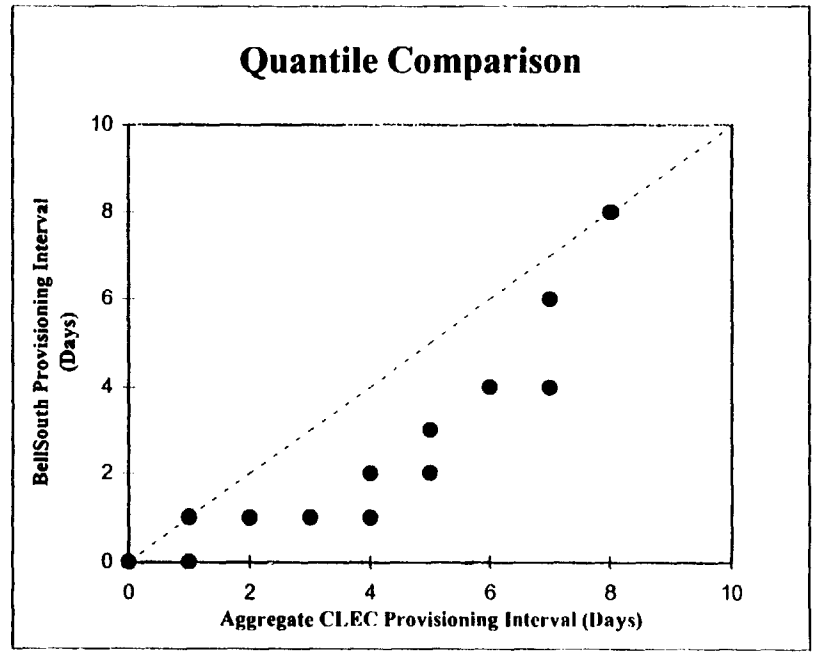
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	5.00	0.0000
FCC	5.05	0.0000
BST	2.17	2.0650

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.
The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
September BellSouth and CLEC Completion Interval-Provisioning
Non-Dispatched, Residential, All Circuits





Descriptive Measures

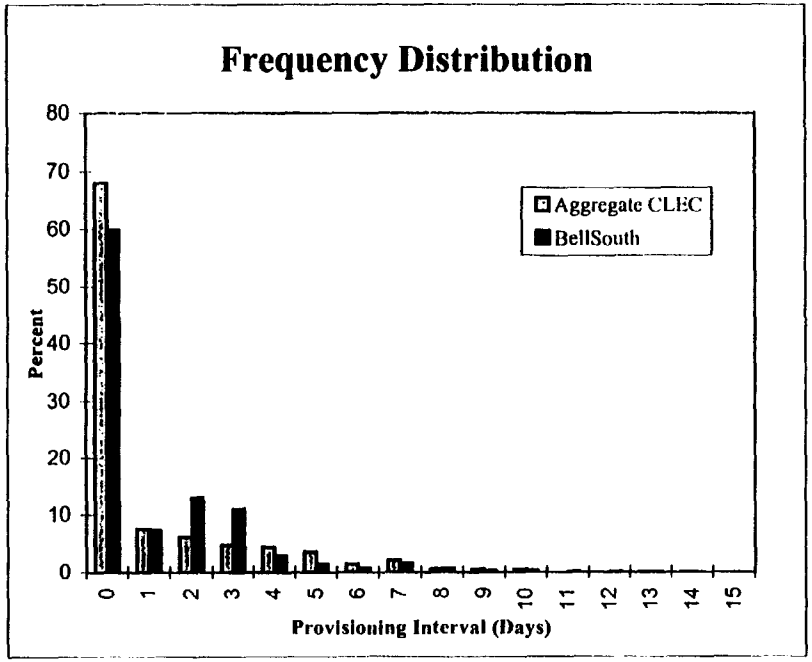
Service Provider	Mean	Standard Deviation
BST	1.26	2.33
CLEC	2.01	2.48
Difference	-0.75	

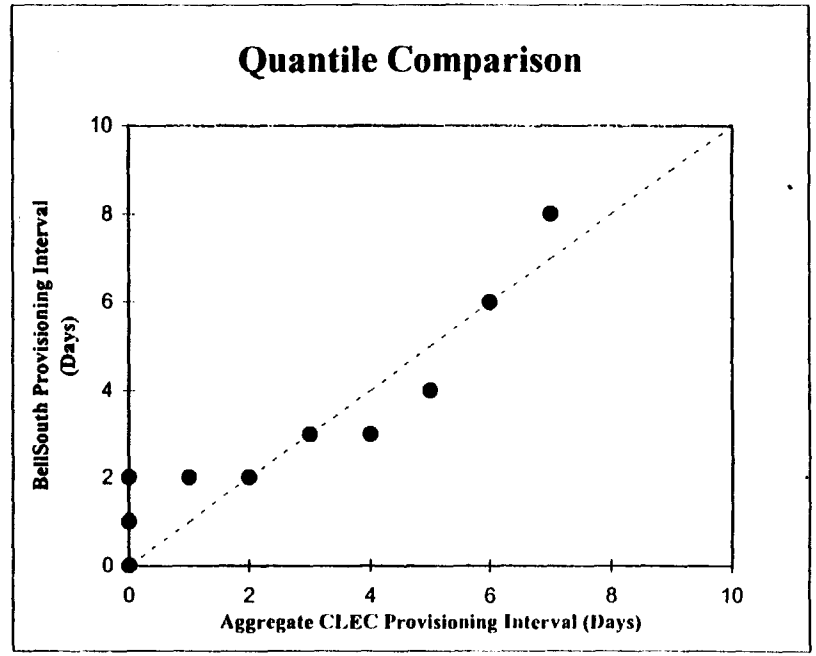
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-37.16	0.0000
FCC	-37.05	0.0000
BST	-11.75	0.0000

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.
The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
September BellSouth and CLEC Completion Interval-Provisioning
Non-Dispatched, Business, All Circuits





Descriptive Measures

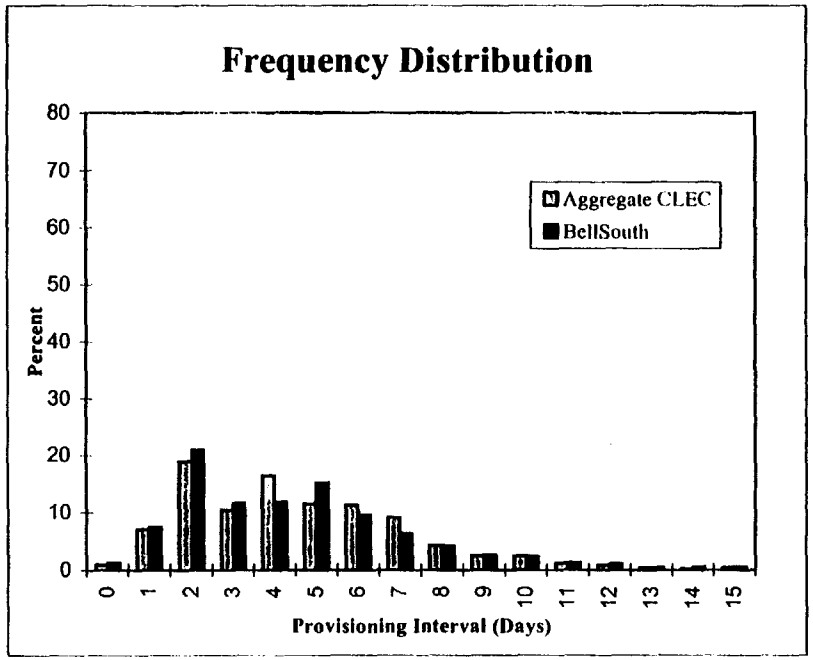
Service Provider	Mean	Standard Deviation
BST	1.27	2.47
CLEC	1.13	2.19
Difference	0.14	

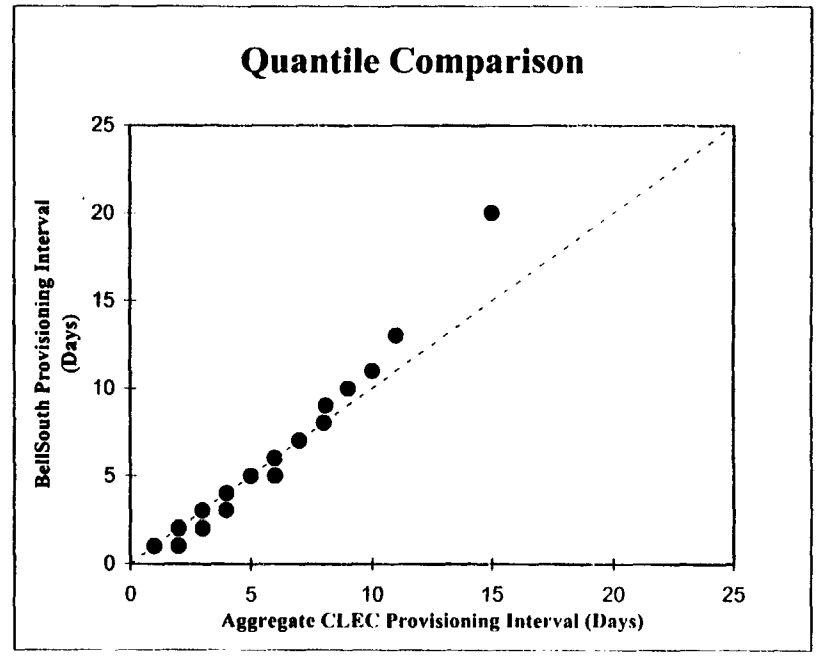
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	2.01	2.2195
FCC	2.02	2.1814
BST	0.49	31.4900

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
September BellSouth and CLEC Completion Interval-Provisioning
Dispatched, Residential, Less Than 10 Circuits





Descriptive Measures

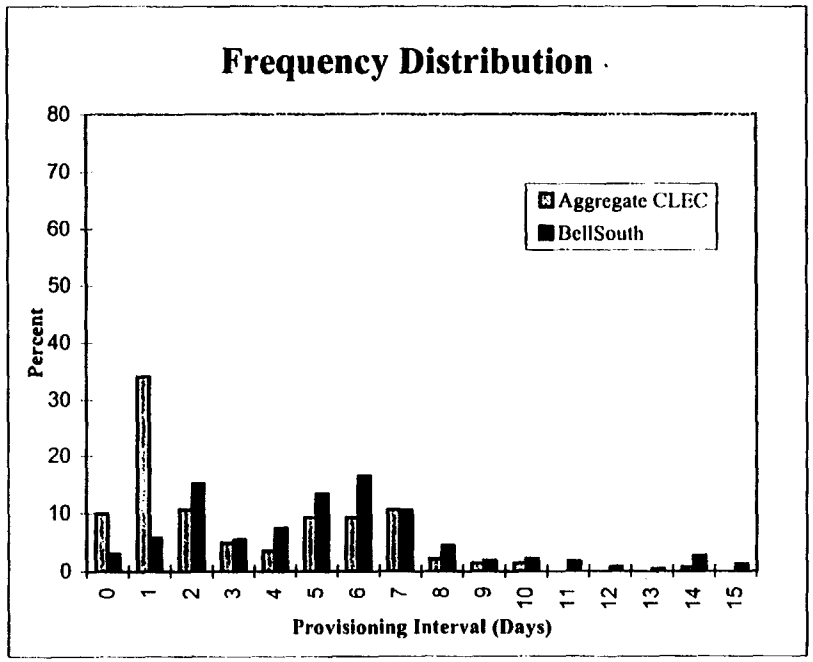
Service Provider	Mean	Standard Deviation
BST	5.05	4.48
CLEC	4.93	3.59
Difference	0.12	

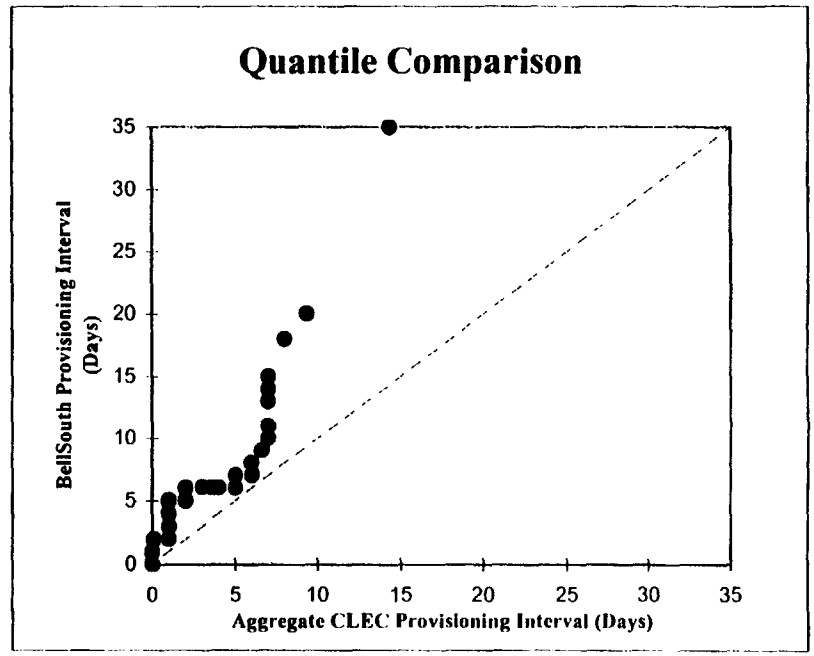
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	0.90	18.4376
FCC	0.91	18.1197
BST	0.78	22.0708

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.
The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
September BellSouth and CLEC Completion Interval-Provisioning
Dispatched, Business, Less Than 10 Circuits





Descriptive Measures

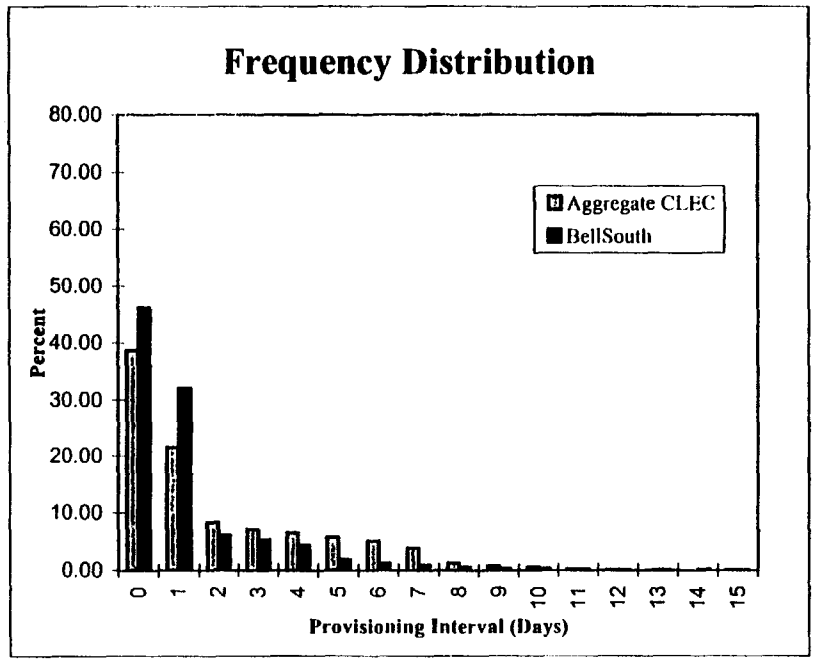
Service Provider	Mean	Standard Deviation
BST	6.96	8.01
CLEC	3.69	4.43
Difference	3.27	

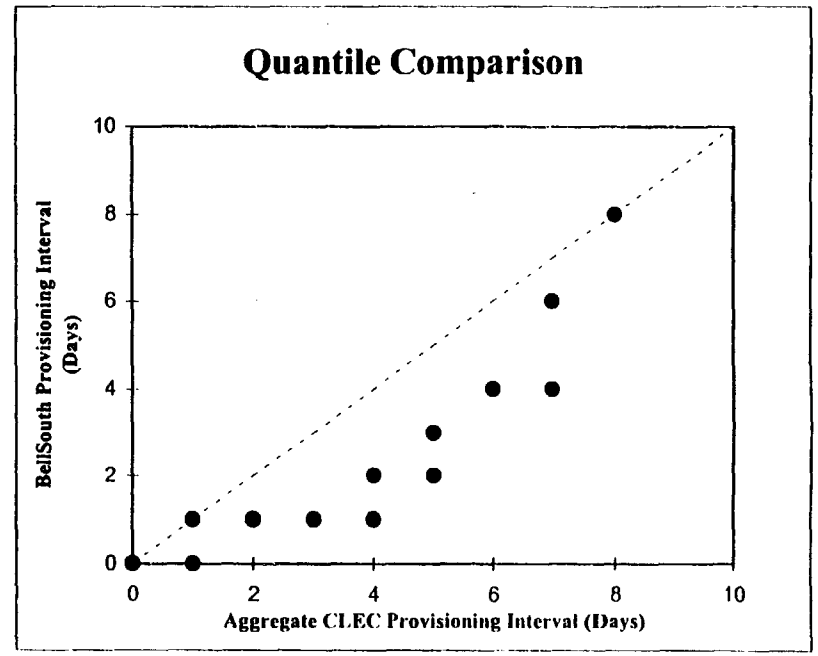
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	4.78	0.0001
FCC	4.83	0.0001
BST	2.07	2.5419

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
September BellSouth and CLEC Completion Interval-Provisioning
Non-Dispatched, Residential, Less Than 10 Circuits





Descriptive Measures

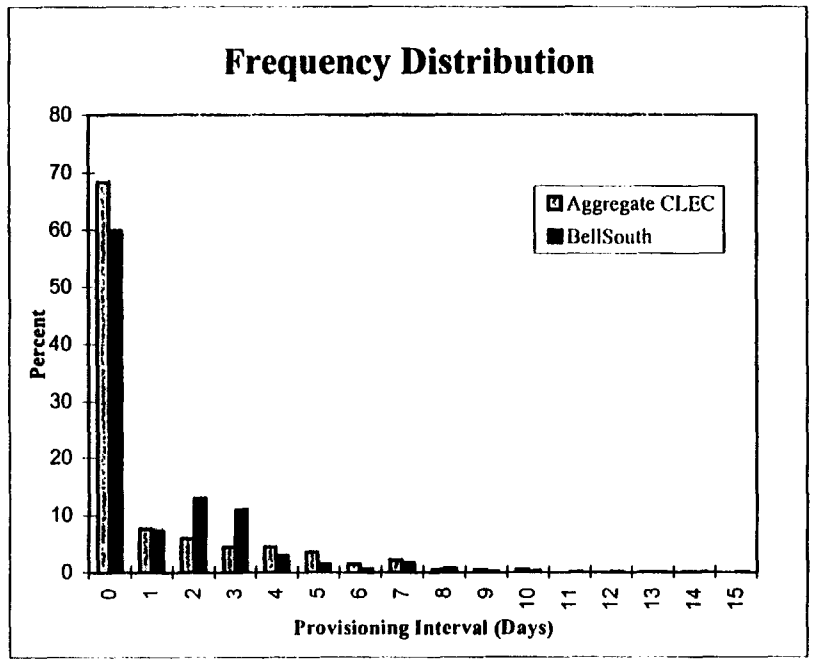
Service Provider	Mean	Standard Deviation
BST	1.26	2.33
CLEC	2.01	2.48
Difference	-0.75	

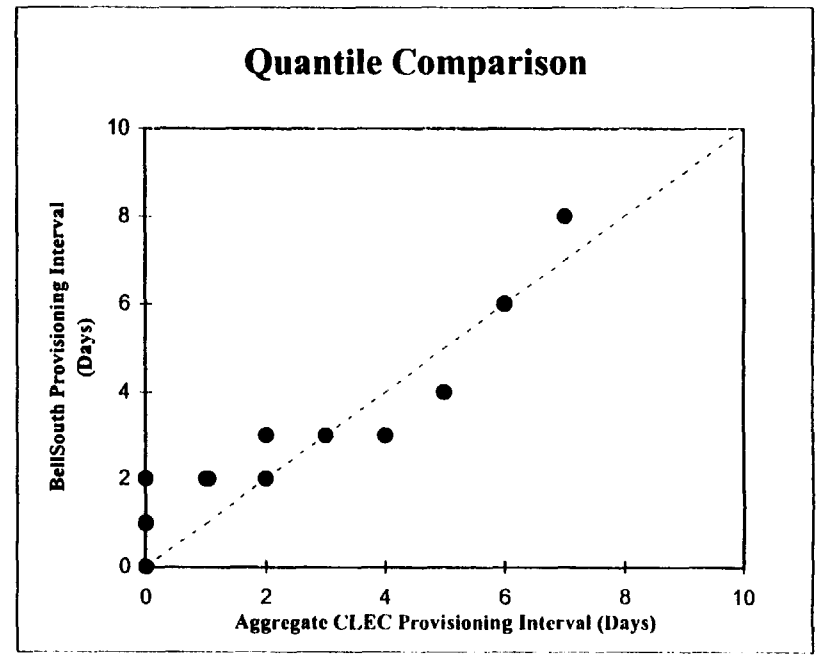
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-37.15	0.0000
FCC	-37.04	0.0000
BST	-11.75	0.0000

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

Adjusted
September BellSouth and CLEC Completion Interval-Provisioning
Non-Dispatched, Business, Less Than 10 Circuits





Descriptive Measures

Service Provider	Mean	Standard Deviation
BST	1.27	2.47
CLEC	1.12	2.19
Difference	0.15	

Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	2.15	1.5811
FCC	2.16	1.5505
BST	0.52	30.3765

Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.
The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.

SQM: Order Completion Interval

SEPTEMBER

	NO DISPATCH															
	SAME DAY		1 DAY		2 DAYS		3 DAYS		4 DAYS		5 DAYS		> 5 DAYS		AVG. (DAYS)	
	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts
CLEC 1																
LOUISIANA																
CLEC AGGREGATE																
LOUISIANA																
- RESALE RESIDENCE	38.45%	0.00%	21.68%	0.00%	8.47%	0.00%	7.24%	0.00%	6.54%	0.00%	5.73%	100.00%	11.90%	0.00%	2.01	5.00
- RESALE BUSINESS	64.94%	0.00%	8.38%	0.00%	7.93%	42.86%	4.95%	42.86%	4.57%	0.00%	3.66%	14.29%	5.56%	0.00%	1.20	2.86
- UNE LOOPS WITH LNP																
BST																
LOUISIANA																
- RETAIL RESIDENCE	59.13%	0.00%	25.51%	0.00%	4.14%	0.00%	5.69%	0.00%	3.21%	0.00%	0.59%	0.00%	1.53%	0.00%	0.83	0.00
- RETAIL BUSINESS	54.86%	53.54%	7.39%	16.54%	18.50%	10.24%	10.10%	0.79%	3.98%	3.94%	1.37%	4.72%	3.82%	10.24%	1.39	1.77

	NO DISPATCH															
	0-5 DAYS		6-10 DAYS		11-15 DAYS		16-20 DAYS		21-25 DAYS		26-30 DAYS		> 30 DAYS		AVG. (DAYS)	
	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts	< 10 Ckts	>= 10 Ckts
CLEC 1																
LOUISIANA																
CLEC AGGREGATE																
LOUISIANA																
- RESALE DESIGN	76.92%	0.00%	7.69%	0.00%	9.62%	0.00%	0.00%	0.00%	3.85%	0.00%	1.92%	0.00%	0.00%	0.00%	5.83	0.00
- UNE DESIGN	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00
- UNE NON-DESIGN	93.94%	0.00%	3.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.03%	0.00%	1.97	0.00
BST																
LOUISIANA																
- RETAIL DESIGN	25.49%	0.00%	23.53%	0.00%	28.76%	0.00%	0.65%	0.00%	4.58%	0.00%	3.92%	0.00%	13.07%	0.00%	14.46	0.00

Definitions

issue date -- Date service order is entered into the system (not necessarily same as application date)

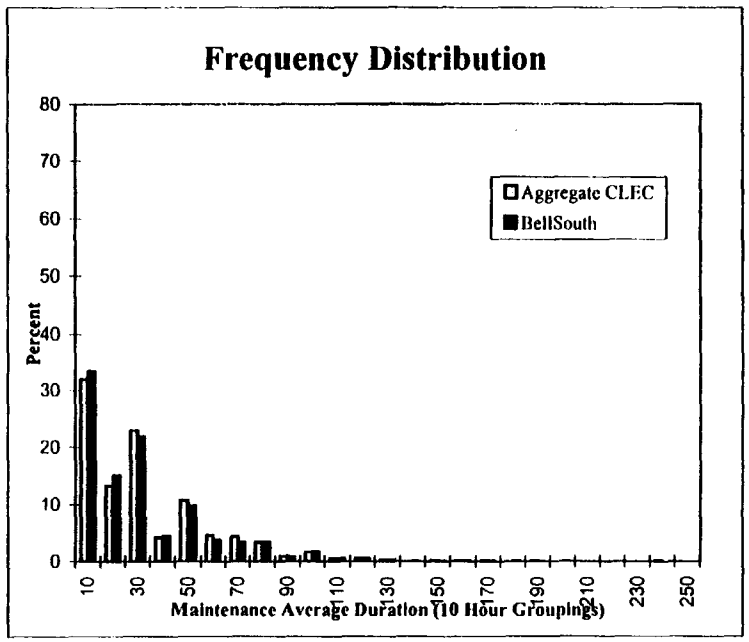
completion date -- Date on which service order is completed

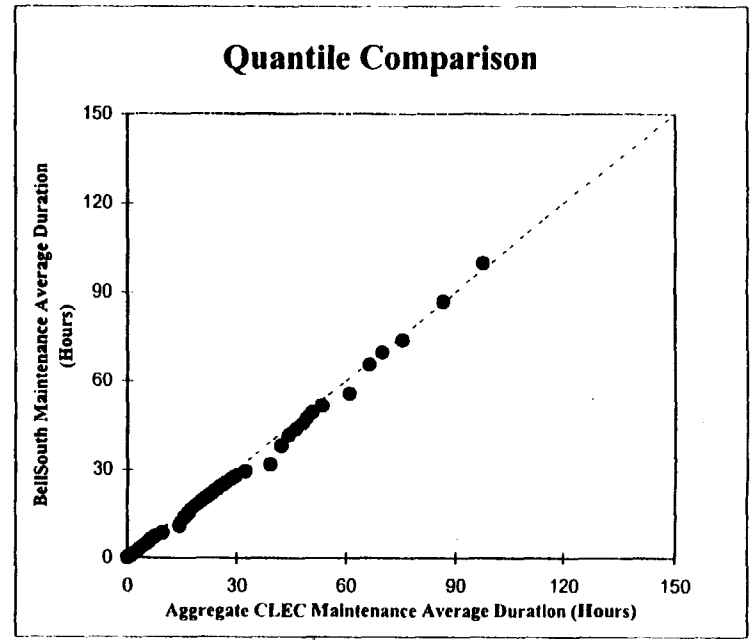
order completion interval -- computed as order completion interval = completion date - issue date

Appendix E
Maintenance Average Duration (MAD) - August Graphics

I. Graphical Representations

Adjusted
August BellSouth and CLEC Average Duration-Maintenance
Non-Designed, All Cases





Descriptive Measures

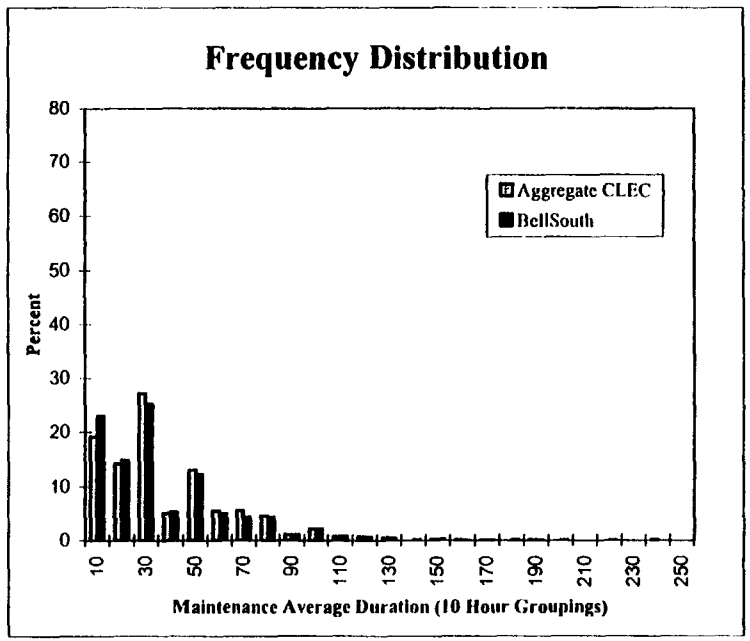
Service Provider	Mean	Standard Deviation
BST	26.51	27.05
CLEC	27.89	27.48
Difference	-1.38	

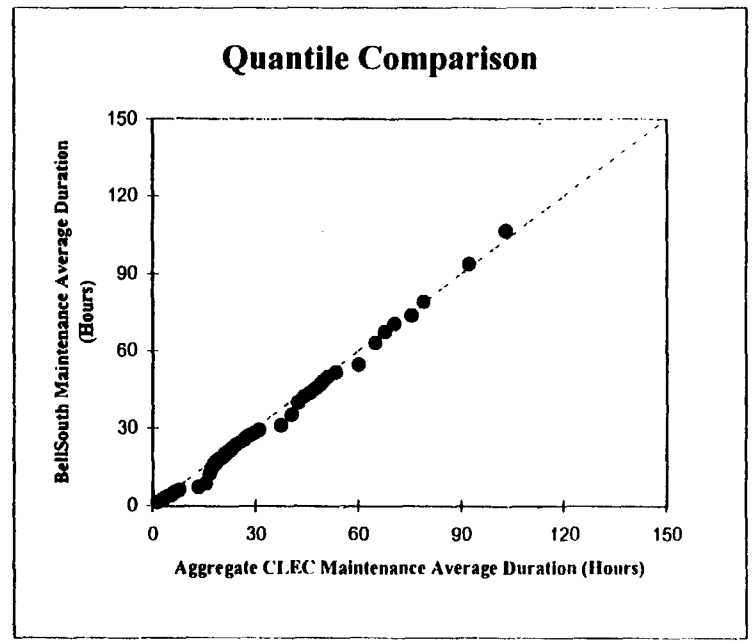
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-1.91	2.7770
FCC	-1.91	2.7809
BST	-1.93	3.1656

Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours

Adjusted
August BellSouth and CLEC Average Duration-Maintenance
Non-Designed, Dispatched





Descriptive Measures

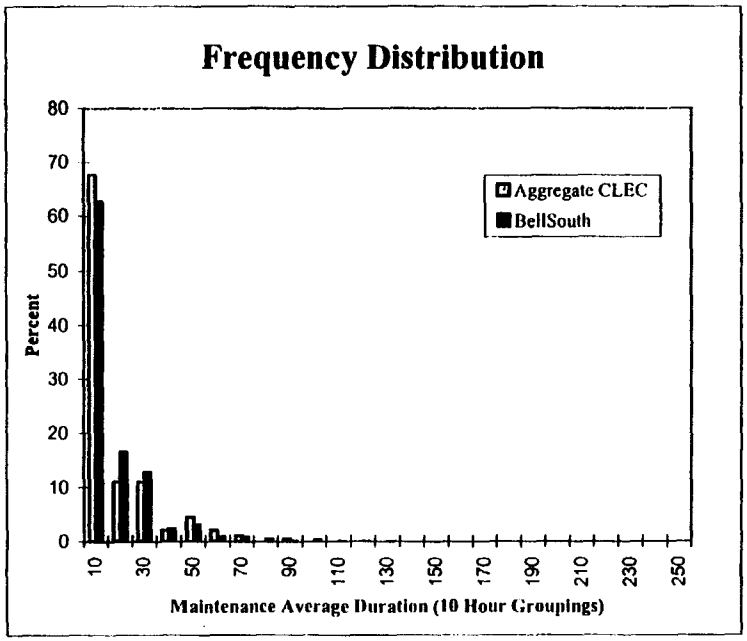
Service Provider	Mean	Standard Deviation
BST	32.05	28.15
CLEC	33.95	28.35
Difference	-1.89	

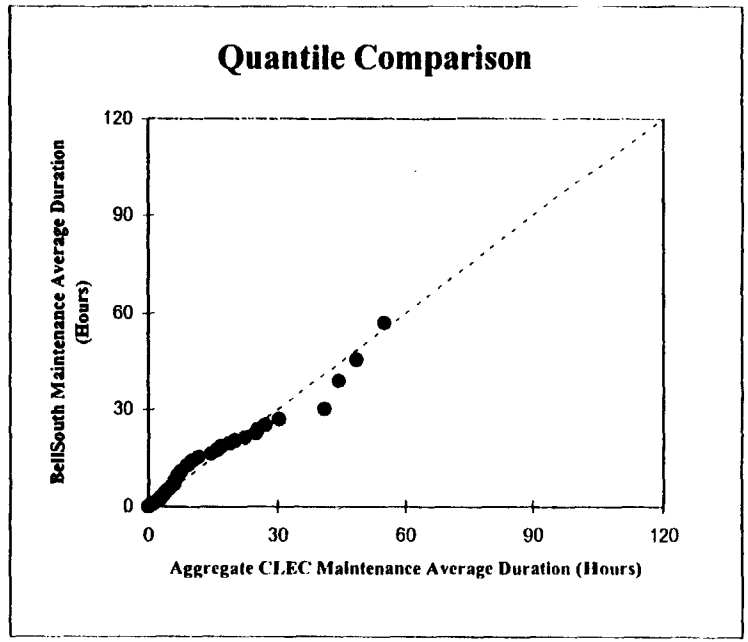
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-2.16	1.5392
FCC	-2.16	1.5406
BST	-2.06	2.4400

Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours

Adjusted
August BellSouth and CLEC Average Duration-Maintenance
Non-Designed, Non-Dispatched





Descriptive Measures

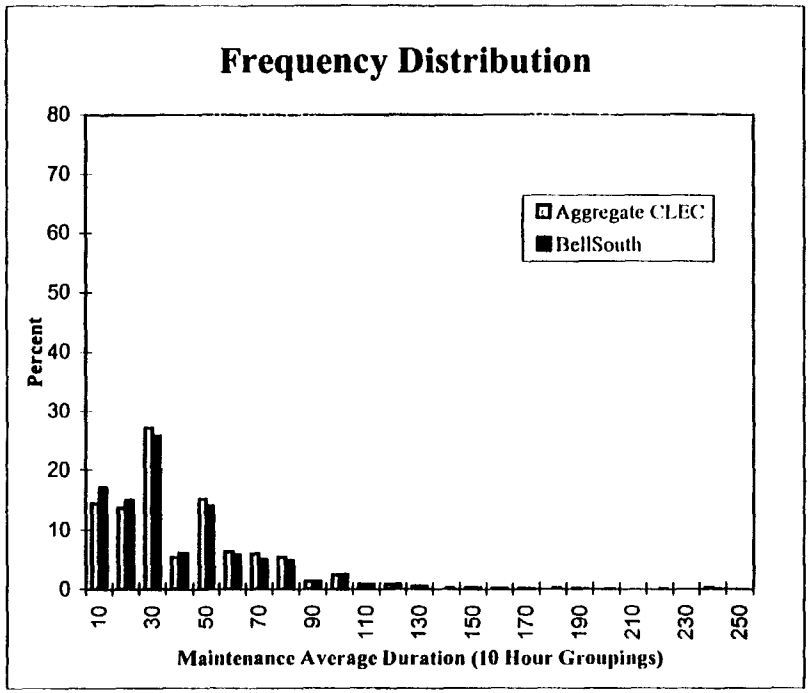
Service Provider	Mean	Standard Deviation
BST	11.11	15.49
CLEC	11.10	15.40
Difference	0.01	

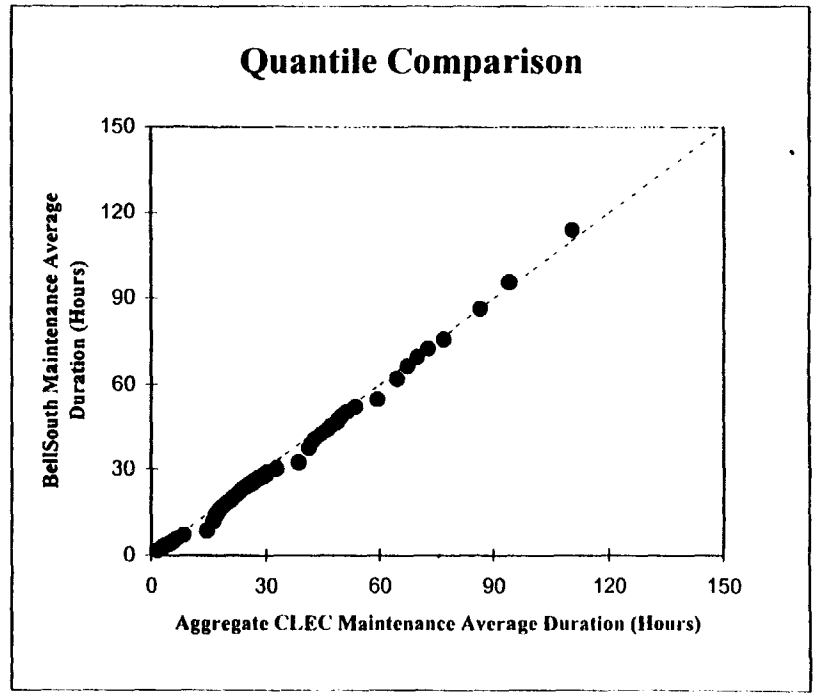
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	0.01	49.6660
FCC	0.01	49.6660
BST	-0.01	49.6851

Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours

Adjusted
August BellSouth and CLEC Average Duration-Maintenance
Non-Designed, Dispatched, Residential





Descriptive Measures

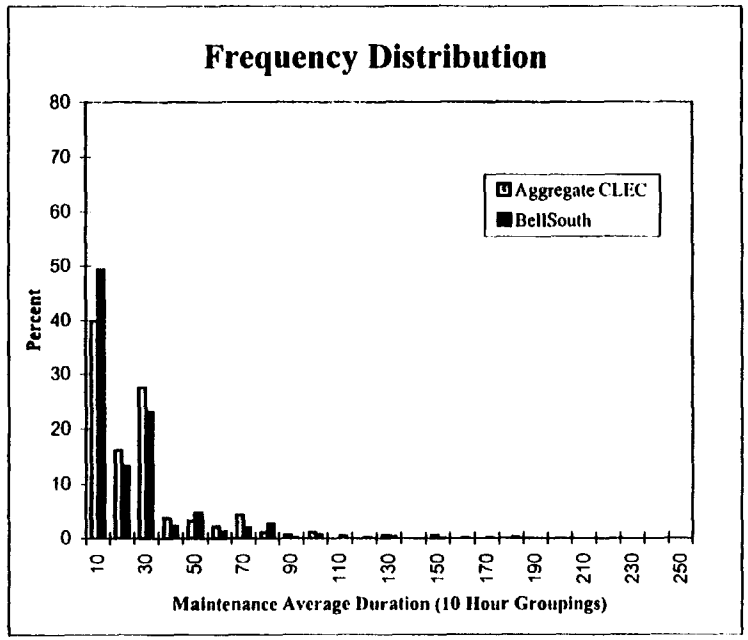
Service Provider	Mean	Standard Deviation
BST	35.05	28.44
CLEC	36.77	28.75
Difference	-1.73	

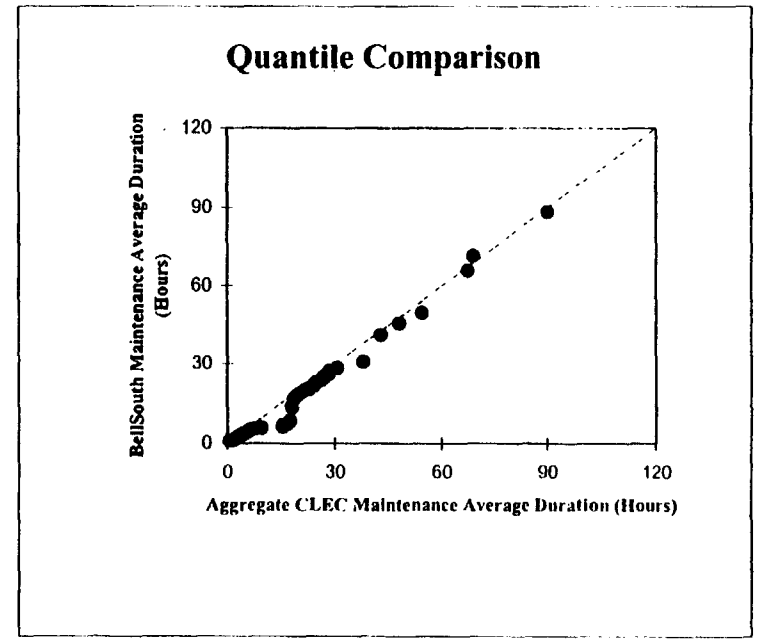
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-1.76	3.9116
FCC	-1.76	3.9157
BST	-1.80	4.1290

Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours

Adjusted
August BellSouth and CLEC Average Duration-Maintenance
Non-Designed, Dispatched, Business





Descriptive Measures

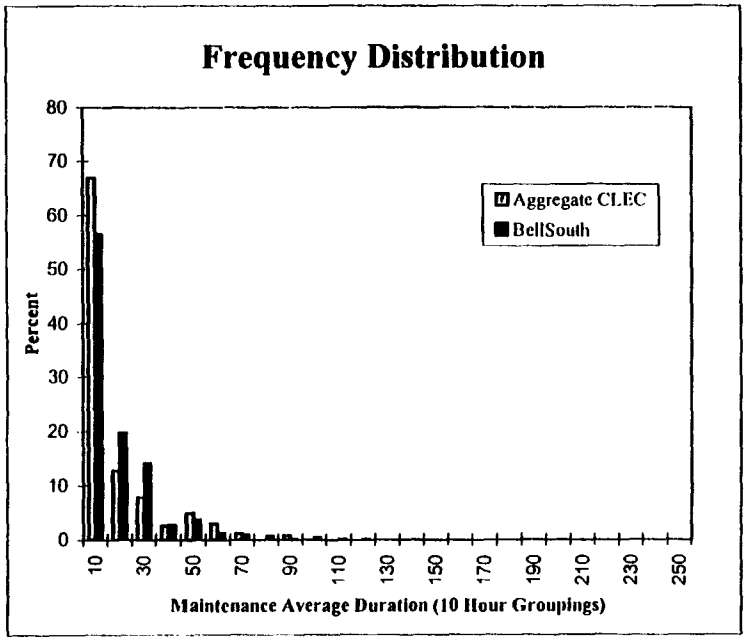
Service Provider	Mean	Standard Deviation
BST	18.64	22.41
CLEC	21.29	22.49
Difference	-2.65	

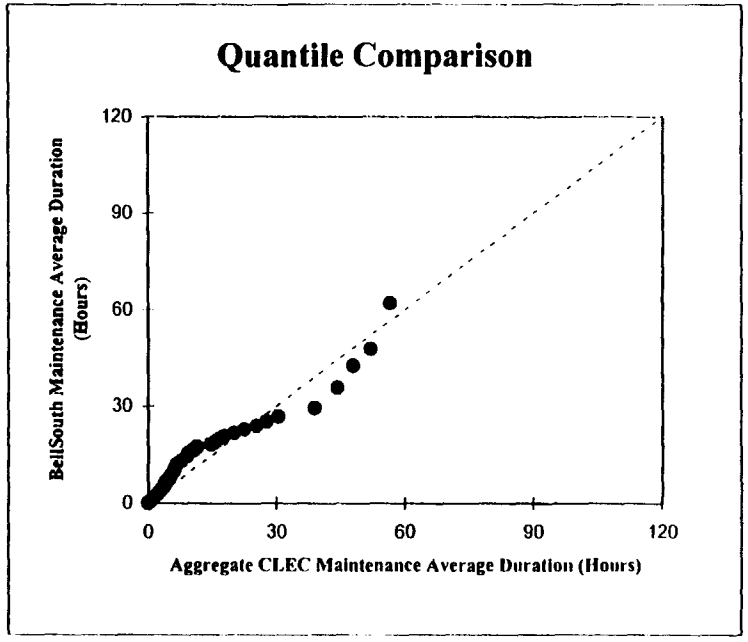
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-1.62	5.2464
FCC	-1.62	5.2479
BST	-0.89	19.0851

Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours

Adjusted
August BellSouth and CLEC Average Duration-Maintenance
Non-Designed, Non-Dispatched, Residential





Descriptive Measures

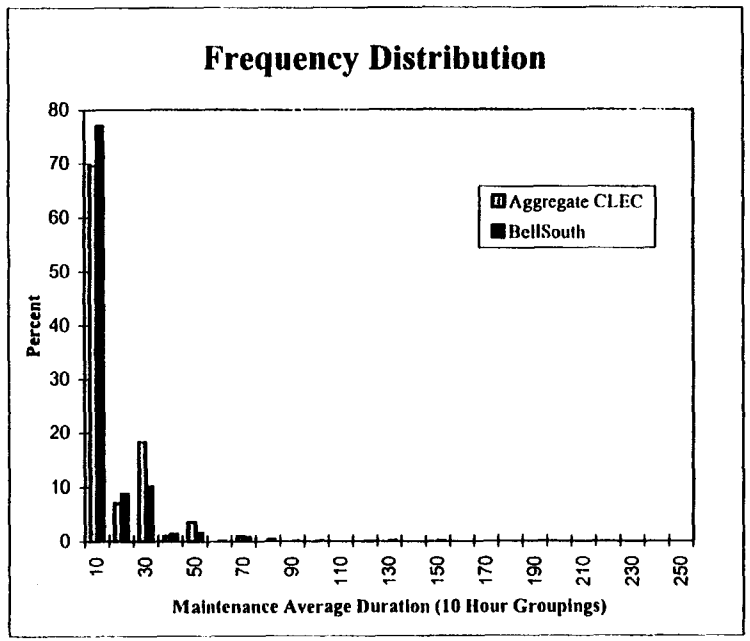
Service Provider	Mean	Standard Deviation
BST	12.74	16.05
CLEC	11.80	16.46
Difference	0.94	

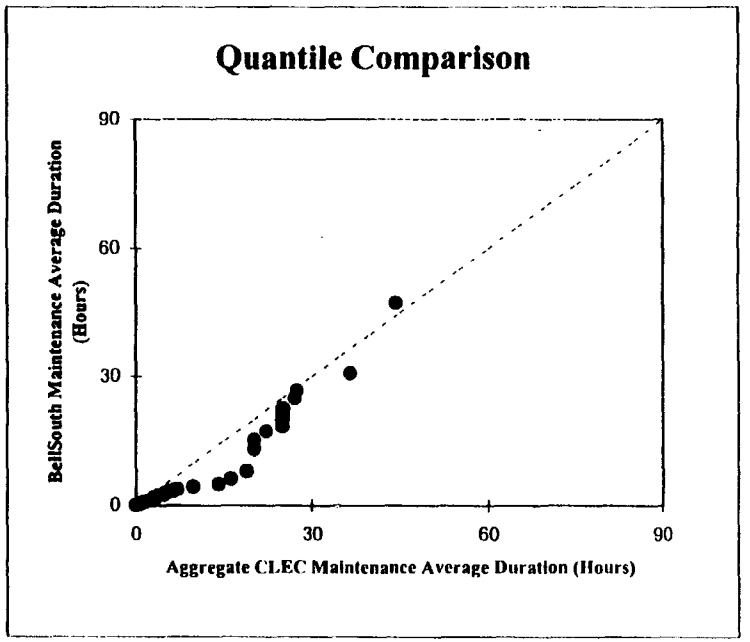
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	0.95	17.1340
FCC	0.95	17.1407
BST	0.79	21.8735

Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours

Adjusted
August BellSouth and CLEC Average Duration-Maintenance
Non-Designed, Non-Dispatched, Business





Descriptive Measures

Service Provider	Mean	Standard Deviation
BST	7.34	13.46
CLEC	9.47	12.52
Difference	-2.13	

Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-1.68	4.6902
FCC	-1.68	4.6589
BST	-1.55	6.7569

Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours

RETAIL SERVICES: BST - BST Aggregate

Report Period: 08/01/1998 to 08/31/1998

SQM: Maintenance Average Duration
Non-detailed Report

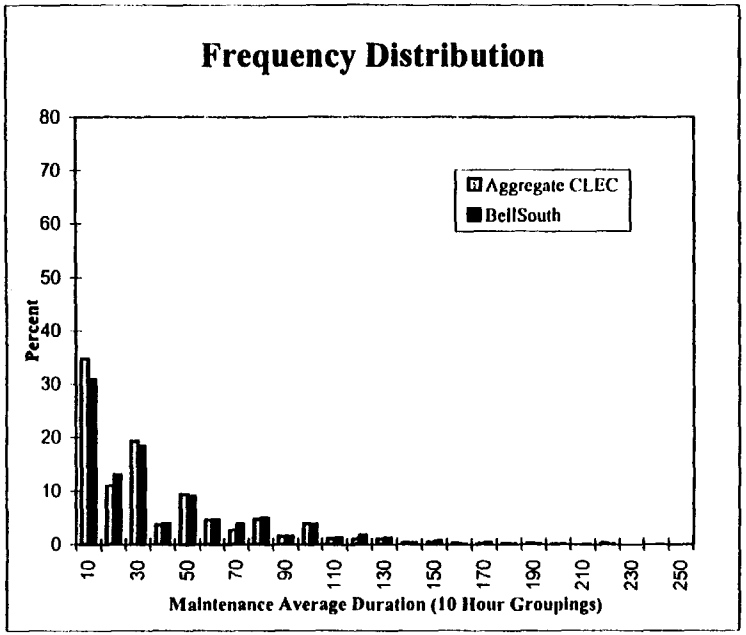
	Residence			Business			Res + Bus		
	Dispatched	Non-Disp.	Total	Dispatched	Non-Disp.	Total	Dispatched	Non-Disp.	Total
ALABAMA	33.79	14.20	26.45	12.06	7.87	10.77	29.98	13.34	23.92
FLORIDA	28.05	13.39	21.90	17.08	9.29	14.08	25.55	12.55	20.19
GEORGIA	27.57	15.29	22.70	14.10	8.67	12.26	24.68	14.12	20.62
KENTUCKY	38.07	18.36	31.26	19.36	6.94	15.77	35.20	16.96	29.04
LOUISIANA	34.08	13.06	25.21	17.77	8.44	14.69	31.01	12.43	23.45
MISSISSIPPI	33.55	12.11	25.18	10.30	4.79	8.54	29.53	11.14	22.55
NORTH CAROLINA	43.87	15.03	31.48	25.59	10.46	20.40	40.03	14.32	29.40
SOUTH CAROLINA	35.50	12.88	27.06	24.84	11.68	20.72	33.34	12.68	25.87
TENNESSEE	60.00	23.64	44.88	20.64	9.00	16.93	53.54	21.97	40.85
REGION	35.97	15.36	27.63	17.70	8.97	14.69	32.32	14.33	25.24

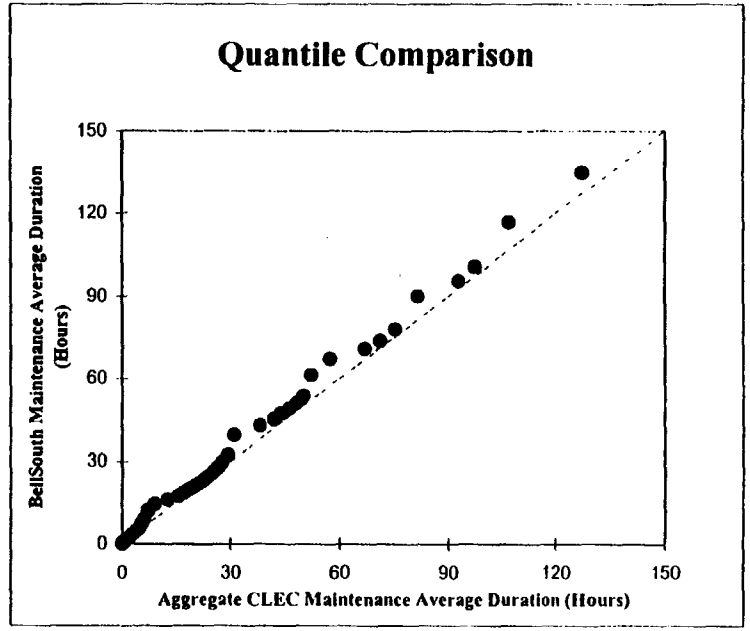
NA = Not Applicable (NA indicates measurements that do not apply to the particular measure)
Blank cells occur as a result of either no activity or when a divide by zero error would result.

Appendix F
Maintenance Average Duration (MAD) - September Graphics

I. Graphical Representations

Adjusted
September BellSouth and CLEC Average Duration-Maintenance
Non-Designed, All Cases





Descriptive Measures

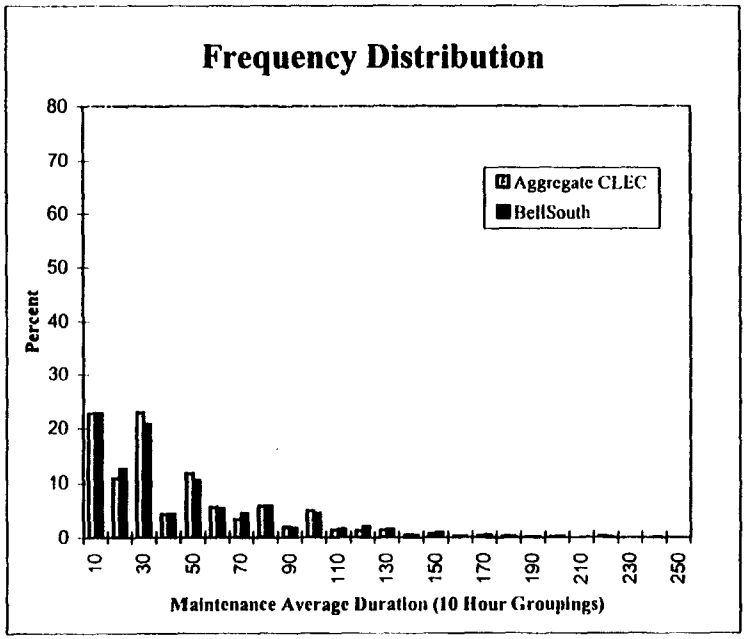
Service Provider	Mean	Standard Deviation
BST	34.55	36.23
CLEC	32.23	35.15
Difference	2.32	

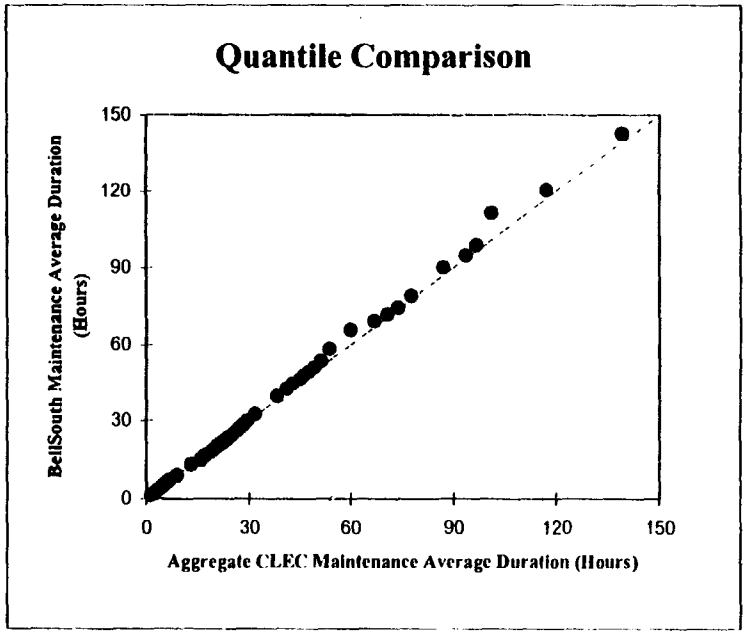
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	2.81	0.2448
FCC	2.82	0.2435
BST	2.43	1.0729

Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours

Adjusted
September BellSouth and CLEC Average Duration-Maintenance
Non-Designed, Dispatched





Descriptive Measures

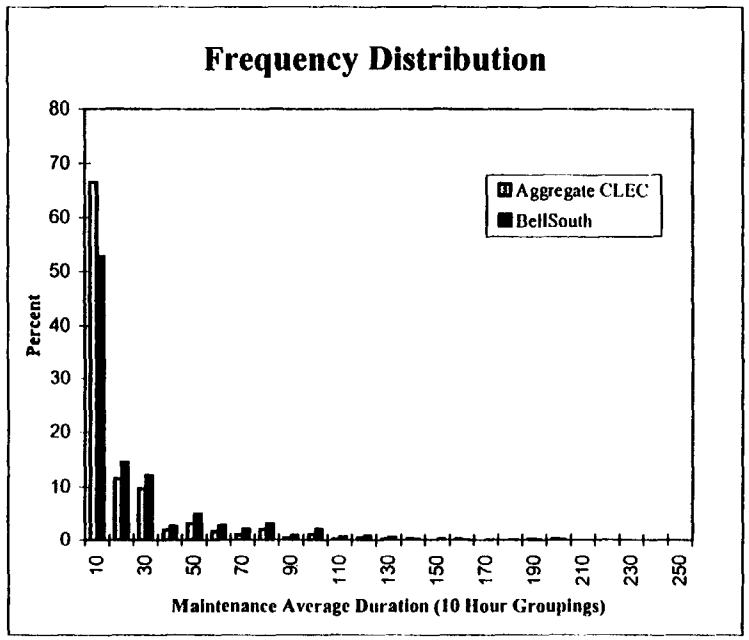
Service Provider	Mean	Standard Deviation
BST	39.94	37.28
CLEC	39.11	36.09
Difference	0.83	

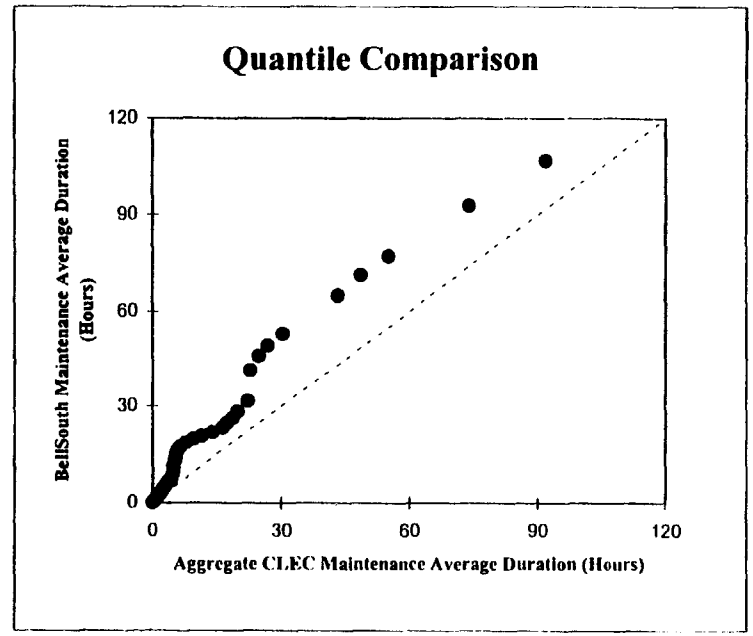
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	0.83	20.2465
FCC	0.83	20.2276
BST	0.68	25.0975

Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours

Adjusted
September BellSouth and CLEC Average Duration-Maintenance
Non-Designed, Non-Dispatched





Descriptive Measures

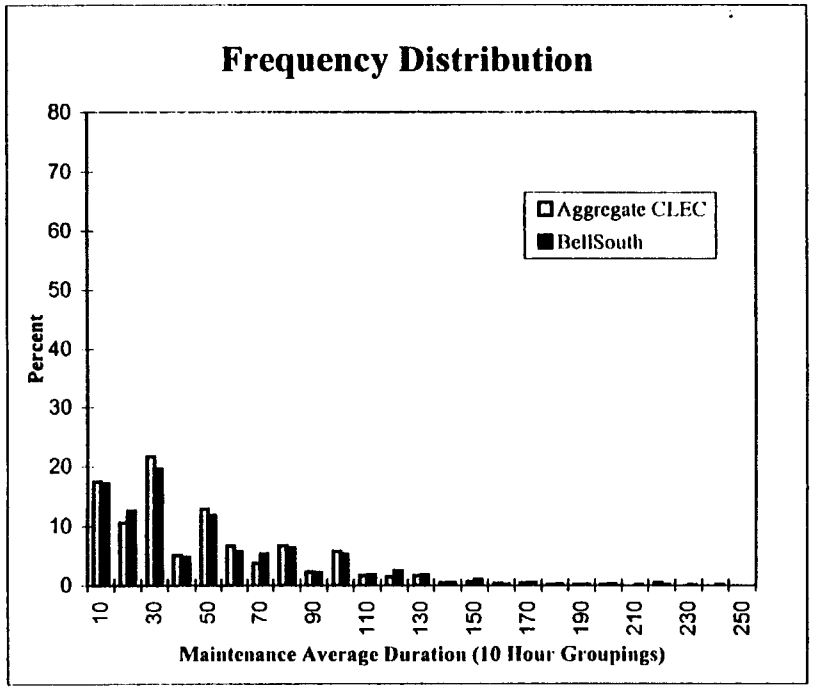
Service Provider	Mean	Standard Deviation
BST	20.31	28.79
CLEC	14.01	24.52
Difference	6.30	

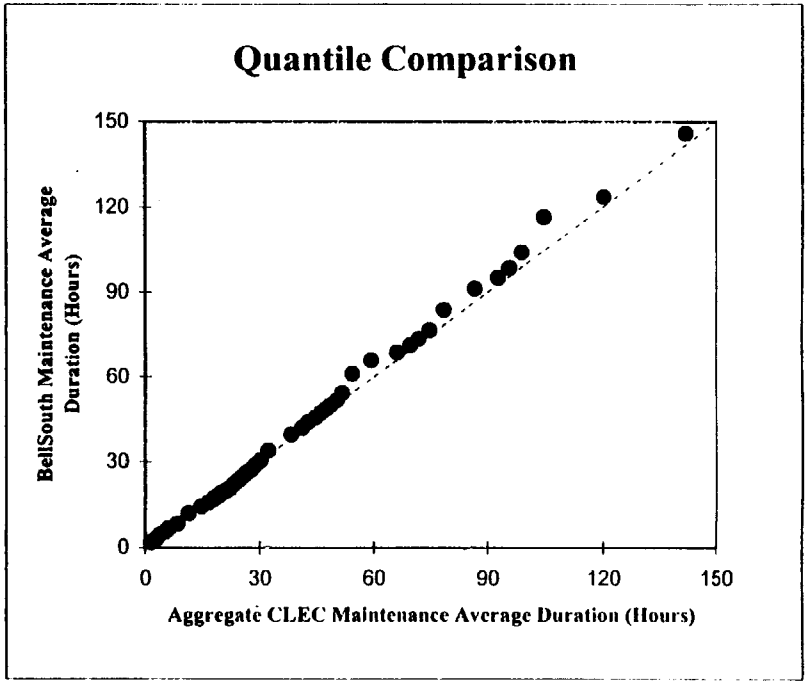
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	5.05	0.0000
FCC	5.06	0.0000
BST	5.55	0.0003

Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours

Adjusted
September BellSouth and CLEC Average Duration-Maintenance
Non-Designed, Dispatched, Residential





Descriptive Measures

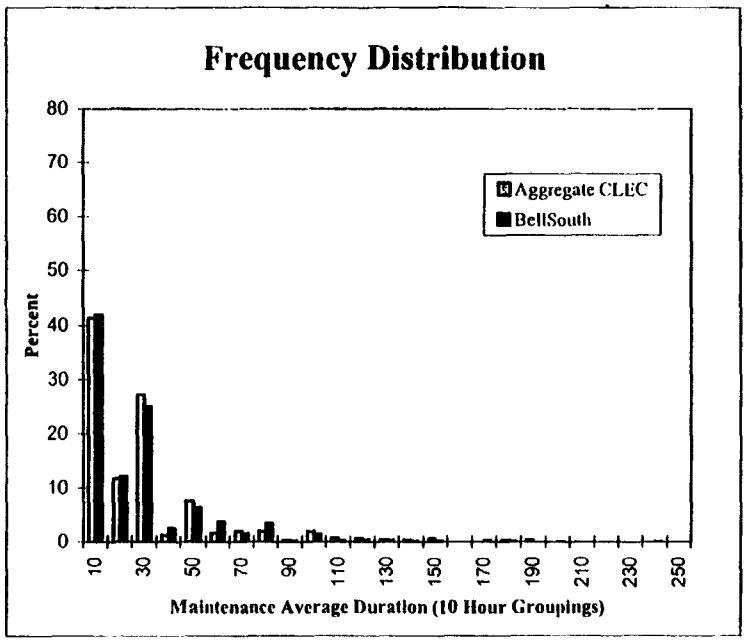
Service Provider	Mean	Standard Deviation
BST	44.73	38.50
CLEC	43.41	36.81
Difference	1.32	

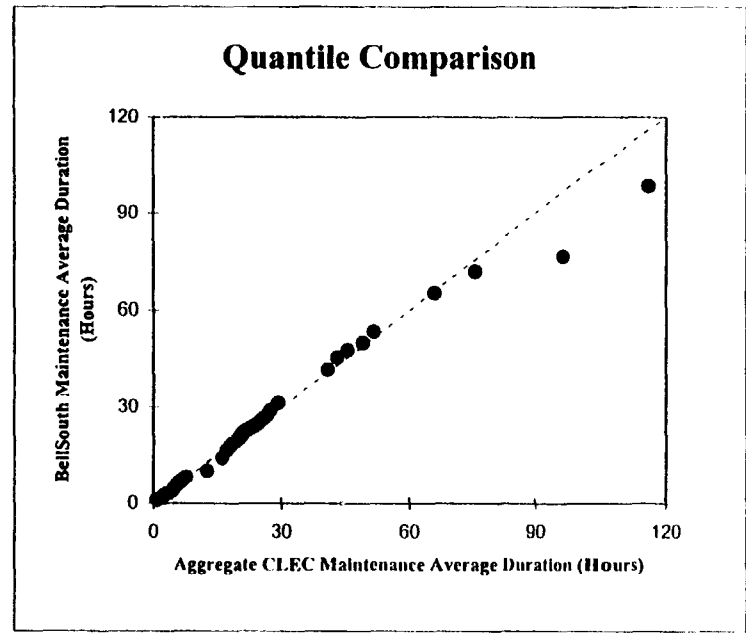
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	1.13	12.8696
FCC	1.13	12.8447
BST	0.99	16.5790

Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours

Adjusted
September BellSouth and CLEC Average Duration-Maintenance
Non-Designed, Dispatched, Business





Descriptive Measures

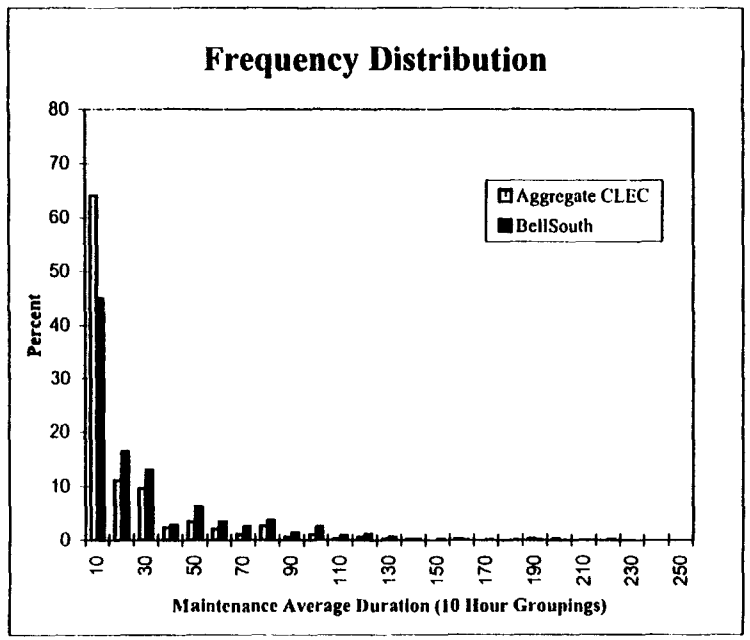
Service Provider	Mean	Standard Deviation
BST	22.98	26.44
CLEC	23.90	28.70
Difference	-0.92	

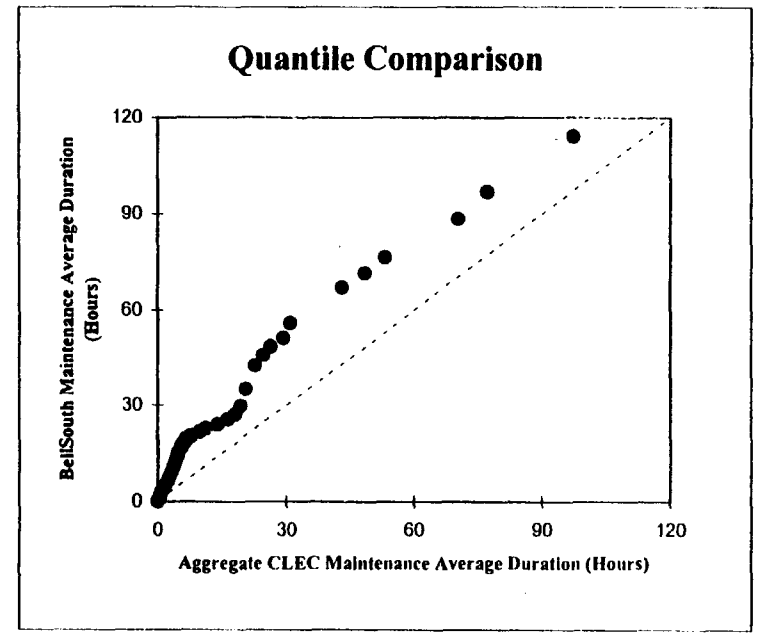
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	-0.61	27.0616
FCC	-0.61	27.1166
BST	-0.41	34.1136

Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours

Adjusted
September BellSouth and CLEC Average Duration-Maintenance
Non-Designed, Non-Dispatched, Residential





Descriptive Measures

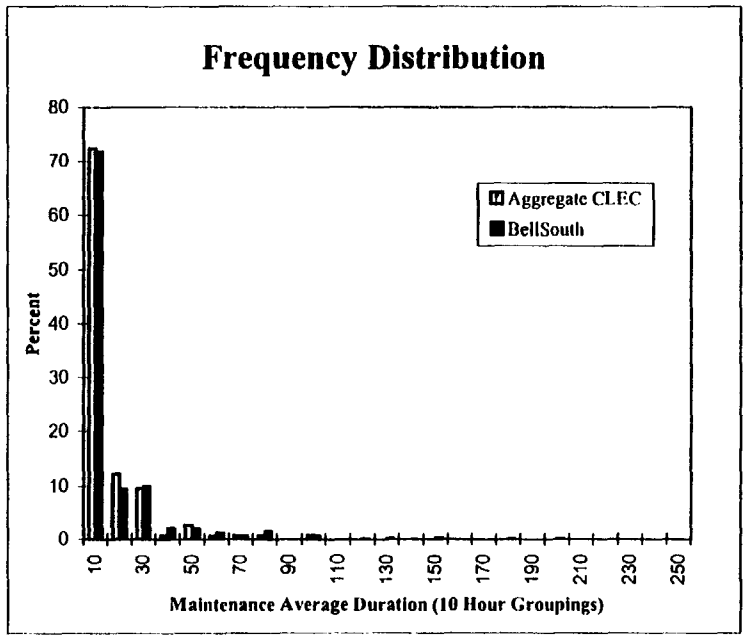
Service Provider	Mean	Standard Deviation
BST	24.24	30.70
CLEC	15.99	27.27
Difference	8.25	

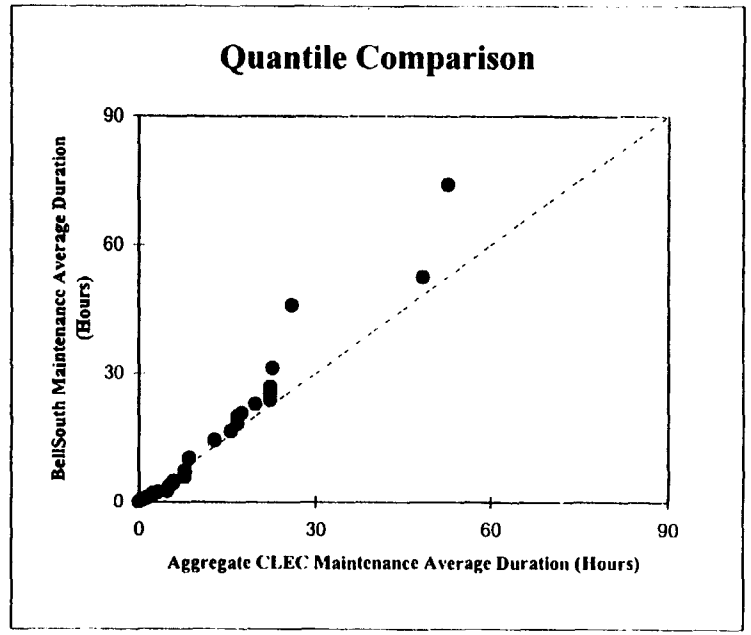
Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	5.23	0.0000
FCC	5.24	0.0000
BST	5.30	0.0005

Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours

Adjusted
September BellSouth and CLEC Average Duration-Maintenance
Non-Designed, Non-Dispatched, Business





Descriptive Measures

Service Provider	Mean	Standard Deviation
BST	10.64	20.56
CLEC	9.13	14.84
Difference	1.51	

Analytic Measures

Testing Method	Test Statistic	P-value (percent)
LCUG	0.90	18.4693
FCC	0.91	18.2394
BST	0.51	30.8961

Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours

RETAIL SERVICES: BST - BST Aggregate

Report Period: 09/01/1998 to 09/30/1998

SQM: Maintenance Average Duration
Non-detailed Report

	Residence			Business			Res + Bus		
	Dispatched	Non-Disp.	Total	Dispatched	Non-Disp.	Total	Dispatched	Non-Disp.	Total
ALABAMA	31.94	16.76	25.29	12.17	9.44	11.29	28.05	15.81	22.92
FLORIDA	26.09	12.56	20.20	16.88	8.19	13.60	23.99	11.73	18.81
GEORGIA	24.98	12.89	20.09	14.36	10.05	12.91	22.64	12.40	18.63
KENTUCKY	27.16	11.18	21.51	17.55	5.56	13.93	25.57	10.41	20.33
LOUISIANA	43.69	22.15	34.91	21.78	11.03	18.84	39.67	20.94	32.42
MISSISSIPPI	36.41	16.31	27.09	10.72	6.99	9.57	31.72	15.35	24.50
NORTH CAROLINA	41.84	12.59	30.62	25.33	9.07	19.86	38.02	11.90	28.27
SOUTH CAROLINA	32.22	11.12	24.38	27.30	11.41	21.96	31.16	11.18	23.88
TENNESSEE	30.21	11.90	22.78	15.03	5.89	12.07	27.41	11.07	21.00
REGION	31.61	14.26	24.43	17.78	8.80	14.75	28.73	13.39	22.60

NA = Not Applicable (NA indicates measurements that do not apply to the particular measure)
Blank cells occur as a result of either no activity or when a divide by zero error would result.